ORDER NO. VSD9805M208
D4

Service Manual

S-VHS Hi-Fi

Video Cassette Recorder

AG-5710P

K-MECHANISM

Sec. 1 *Operating Instructions*
Sec. 2 *Service Information*
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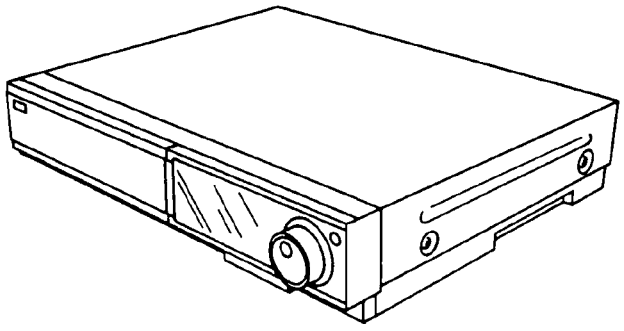
Sec. 8 *Exploded Views & Replacement Parts*

Please use this service manual together with the service manual for K-MECHANISM (Order No. VSD9401M242).



Panasonic

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

INTRODUCTION

This service manual contains technical information which will allow service personnels to understand and service the Panasonic Video Cassette Recorder model AG-5710P.

If the part or circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original manual.

Specifications

[GENERAL]

Power requirements: 120V AC, 50 – 60 Hz
Power consumption: 29W

Video recording unit:
2 rotary heads, helical scanning azimuth recording system, S-VHS/VHS system
Video heads:
4 heads
Tape speed:
33.35 mm/sec. in 2H (standard) mode
11.12 mm/sec. in 6H (triple) mode
Tape used:
S-VHS/VHS tapes
Recording time:
120 minutes (using NV-T120) in 2H (standard) mode
Fast forward/rewind time:
Less than 3 minutes (using NV-T120)
Ambient operating temperature:
5 to 40 degrees Celsius
Ambient operating humidity:
30 to 80% (no condensation)
Dimensions (W×H×D):
16 15/16″×4 3/8″×14 15/16″ (430×110×380 mm)
Weight:
14.08 lbs. (6.4 kg) (including power cord)

[VIDEO]

TV system:
NTSC TV system (525 lines, 60 fields)
Modulation system:
Luminance signal: FM modulation
Color signal: Low-range conversion
Input levels:
VIDEO IN (BNC): 1.0 V_{P-P}, 75 Ω
S-VIDEO IN (4P):
Y: 1.0 V_{P-P}, 75 Ω
C: 0.286 V_{P-P}, 75 Ω (burst)
Output levels:
VIDEO OUT (BNC): 1.0 V_{P-P}, 75 Ω
S-VIDEO OUT (4P):
Y: 1.0 V_{P-P}, 75 Ω
C: 0.286 V_{P-P}, 75 Ω (burst)
Horizontal resolution:
Color, B/W mode:
More than 240 lines (VHS/2H; standard mode)
More than 400 lines (S-VHS/2H; standard mode)
S/N ratio:
Color mode:
44 dB (VHS/2H, standard mode)
47 dB (S-VHS/2H, standard mode)

[AUDIO]

Input levels:
AUDIO IN (PHONO):
–10 dBV, 47 kΩ
MIC IN (M3×1):
–70 dBV, 4.7 kΩ
Output levels:
AUDIO OUT (PHONO):
–8 dBV, 1 kΩ
MONITOR OUT (PHONO):
–8 dBV, 1 kΩ
HEADPHONES:
–60 to –30 dBV, 8 Ω
Audio tracks:
Linear (NORMAL): 1 track
HD (Hi-Fi): 2 tracks
Dynamic range:
90 dB (Hi-Fi audio tracks)
Frequency response:
50 Hz to 10 kHz (normal)
20 Hz to 20 kHz (Hi-Fi audio tracks)

SAFETY PRECAUTIONS

GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohm meter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal dose not have a return path to the chassis, the reading must be ∞.

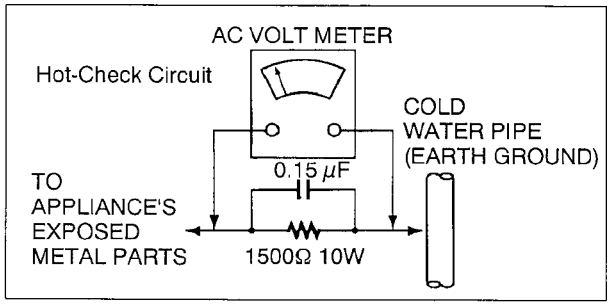

Figure 1

LEAKAGE CURRENT HOT CHECK (See Figure 1)

1. Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
2. Connect a 1.5KΩ, 10W resistor, in parallel with 0.15μF capacitor, between each exposed metallic part on the set an a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
   Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (most replacement ES devices are packaged with leads electrically shorted together by conductive foam. aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION:Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices.(Otherwise harmless mother such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

X-RADIATION

WARNING

1. The potential source of X-Radiation in EVF sets is the High Voltage section and the picture tube.
2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing X-Radiation.

NOTE:It is important to use an accurate periodically calibrated high voltage meter.

3. Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV, ±0.15kV. If the meter indication is out of tolerance, immediate service ahd correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

SECTION 1

OPERATING INSTRUCTIONS

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Features

S-VHS/VHS mode recording and playback
This unit can record and playback for 2 hours (2H: standard mode) or 6 hours (6H: triple mode) in either S-VHS or VHS mode.

Hi-Fi sound

Assemble editing and insert editing
Using the AG-A571 editing controller (purchased separately), two units— a player and a recorder— can be controlled directly from the controller for editing purposes.

Insertion of video signals
Video signals (including Hi-Fi audio signals) can be inserted.

Audio dubbing
Sound can be added to the video recording. (This applies to normal sound only.)

Computer control
Remote control can be exercised from a personal computer by connecting the RS-232C cable to the computer.

Sensor recording
When video signals are supplied to the unit, the power is automatically turned on and the recording mode is established. (This applies to the line input only.)

Repeat playback
Pre-recorded tapes can be played repeatedly.
- Section extending from tape start to video signal end
  (Unless the video signals come to an end on the tape, the tape will be automatically played from the tape start to tape end.)

Index search (VISS high-speed automatic search system)
A particular scene can be easily searched and automatically played back if a VISS signal is written at that scene. (VISS stands for VHS Index Search System.)

Jog/shuttle dial
The playback speed can be varied using the shuttle ring from still picture to up to 9 times normal speed (or 27 times in the 6H: triple mode) in both the forward and reverse directions.
The playback speed is determined by the speed at which the jog dial is turned, and the direction of playback, whether forward or reverse, is determined by the direction in which the dial is turned.

Cueing and reviewing
When the fast forward or rewind button is pressed during playback, the tape is played back at 9 times (standard mode) or at 11 times (triple mode) normal speed. This enables particular scenes to be located speedily and easily.
(When the button is held down, playback at 9 times or 11 times the normal speed is enabled for as long as the button is held down, and regular playback is restored when it is released.)

High-speed mechanism
When any one of the following buttons is pressed, its function is activated immediately.
- Play
- Fast forward/rewind
- Cue/review

Clear still-picture and slow-motion images

Auto power ON
The unit's power is automatically turned on when a cassette is inserted.

Ejection of cassette by simply turning off power

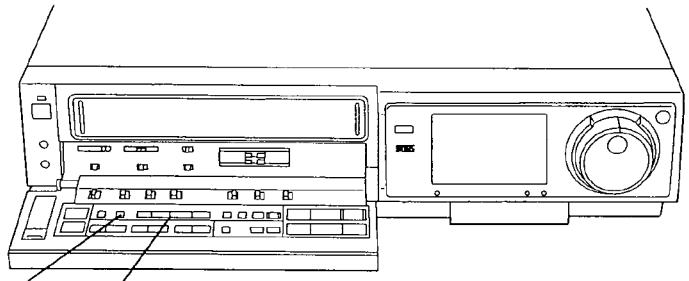
Remote control
The unit can be operated from a distance of about 5 meters when the AG-A11 remote controller (purchased separately) is connected.

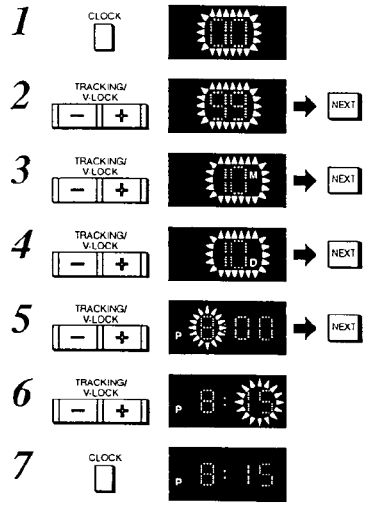
Accessories

Standard accessories
- Power cord (×1)

Accessories purchased separately
- Remote controller (AG-A11)
- Editing controller (AG-A571)
- Video cassette tape
- RS-232C cable

Setting the time





This unit's clock displays the time on a 12-hour basis.

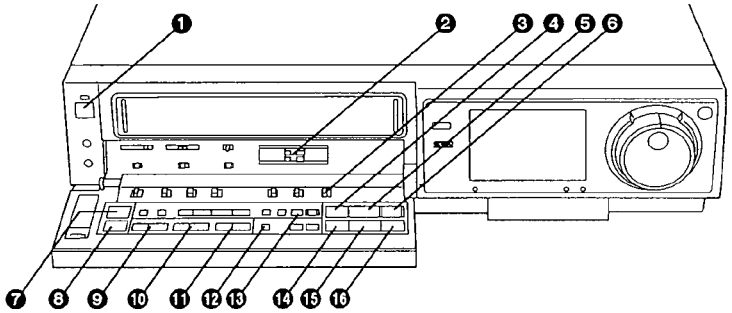
Preparations:
Set the VTR to "ON."

Setting procedure

1. Press the **CLOCK** button for about a second to start the clock setting procedure.
2. Press the **[+]** or **[–] TRACKING/V-LOCK** button to set the year, and then press the **NEXT** button.
3. Press the **[+]** or **[–] TRACKING/V-LOCK** button to set the month, and then press the **NEXT** button.
4. Press the **[+]** or **[–] TRACKING/V-LOCK** button to set the day, and then press the **NEXT** button.
5. Press the **[+]** or **[–] TRACKING/V-LOCK** button to set the hour, and then press the **NEXT** button.
6. Press the **[+]** or **[–] TRACKING/V-LOCK** button to set the minute.
7. Press the **CLOCK** button again to complete the setting procedure.

Parts and their functions

Front panel parts



Basic operations

❶ POWER button
Press this to set the VTR's power ON or OFF. When the power is set ON, the POWER indicator above the button lights.
- **Automatic power ON**
  When a video cassette is inserted, the VTR's power is automatically turned on.

❷ HI-FI REC LEVEL controls
Use these controls to adjust the Hi-Fi recording level. Adjust them in such a way that the audio level peak display does not exceed +4 dB or so.

❸ S-VHS selector
Use this to select the S-VHS tape recording system.
ON: For recording with the S-VHS system (the S-VHS display lamp lights).
OFF: For recording with the VHS system (the S-VHS display lamp does not light).
- A VHS cassette is automatically recorded with the VHS system regardless of the position of this selector switch.
- There is no need to operate this switch for playback.
- Tapes recorded with the S-VHS system cannot be played on a conventional VHS VTR.

❹ REW button
In the stop mode:
The tape is rewound when the button is pressed.
During playback:
The tape is reviewed while the button is held down. Review playback is started when the button is pressed for an instant. To return to regular playback, press the PLAY button.
During rewinding:
The tape is reviewed while the button is held down.
"◁◁" appears on the display.

❺ PLAY button
Press this to start playback (normal playback).
"▷" appears on the display.

❻ FF button
In the stop mode:
The tape is fast forwarded when the button is pressed.
During playback:
The tape is cued while the button is held down. Cue playback is started when the button is pressed for an instant. To return to regular playback, press the PLAY button.
During fast forwarding:
The tape is cued while the button is held down.
"▷▷" appears on the display.

Parts and their functions

❼ MODE LOCK button
When this button is pressed, "L" appears on the display, and the front buttons are set to the mode lock status. When it is pressed again, "L" is cleared from the display, and the lock status is released. Even in the mode lock status, the unit can be operated using the AG-A11 remote controller or RS-232C cable purchased separately.
Note:
Operate the unit with the MODE LOCK button at the ON setting when the AG-A571 editing controller is used.

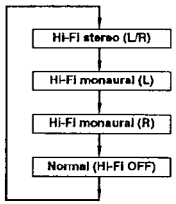
❽ EJECT button
Use this button to eject the cassette.
- When this button is pressed while the power is off, the power is turned on, and the cassette is automatically ejected. After the cassette has been ejected, the power is automatically turned off.

❾ INDEX [|◁◁/▷▷|] button
A particular scene can be easily searched and automatically played back if a VISS signal is written at that scene.
(VISS stands for VHS Index Search System.)

❿ ONE TOUCH TIMER REC ON [+/–] buttons
Use these buttons to set the start time for one-touch timer recording (OTR).

⓫ ONE TOUCH TIMER REC OFF [+/–] buttons
Use these buttons to set the end time for one-touch timer recording (OTR).

⓬ AUDIO OUT button
Use this button to select the audio track. Each time it is pressed in the playback mode, the audio track selected changes as follows.

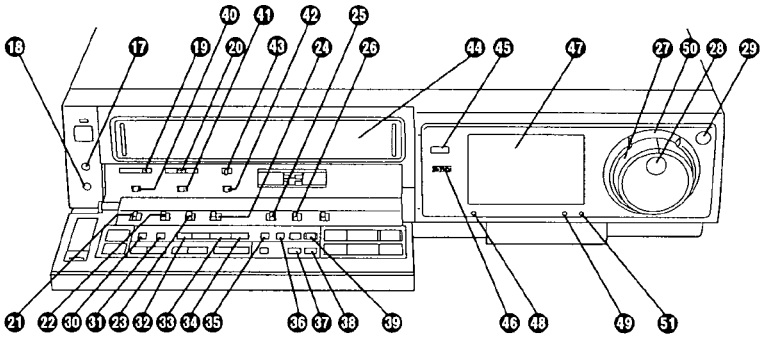


⓭ RECORDING 2H/6H button
2H: Standard mode ("2H" appears on the display).
6H: Triple mode ("6H" appears on the display). The picture and sound quality is inferior to a recording made in the 2H (standard) mode.
- For playback, set the button to the position which corresponds to the mode, 2H or 6H, in which the recording was made.

⓮ PAUSE/STILL button
Use this button to temporarily stop recording or playback. "▷||" appears on the display. Recording or playback is resumed when the button is pressed again.
- When the unit is kept in the recording standby (pause) or still-picture playback mode for more than 5 minutes, it is automatically switched to the stop mode to protect the tape and video heads.

⓯ STOP button
Use this button to stop the recording, playback, etc.

⓰ REC button
Use this to start the recording.
"▷ REC" appears on the display.



Other operations

⑰ MIC jack
Connect the microphone to this jack. When a microphone is connected, all audio input signals except LINEAR will be automatically turned off.

⑱ PHONES jack
Connect the stereo headphones to this jack.

⑲ PHONES LEVEL control
Use this control to adjust the stereo headphones volume.

⑳ PICTURE control
Use this control to adjust the clarity of the picture during playback.

㉑ DETAIL/NOR/EDIT switch
Select the operation of the image compensation circuit as the playback image requires. (When a tape has been recorded with the VHS system, the DETAIL setting functions in the same way as NOR.)

DETAIL: Select this position when the image is free from snow-like noise. It is used when playing back a pre-recorded S-VHS tape or other quality recording tapes.

NOR: Normally, this position is selected. The snow-like noise is reduced and the picture appears cleaner.

EDIT: Select this position when editing a tape. The deterioration in the picture quality is minimized.

㉒ TBC (time base corrector) switch
The playback images are sometimes distorted when the tape movement becomes unstable during recording or playback. This is due to fluctuations in the tape transport system operation or in the tape speed. The picture quality can be improved in such circumstances by setting the TBC switch to ON.

- When some pre-recorded tapes are played back, the playback images may shake vertically. In a case like this, set the TBC switch to OFF.
- The TBC function works only during normal playback.

㉓ SEARCH SOUND selector

ON: The sound can be heard even during cue or review operations.

OFF: The sound is played only during normal playback.

㉔ HI-Fi/LINEAR MIX switch
When insert editing or audio dubbing editing is to be performed, Hi-Fi sound and normal sound (LINEAR) may end up being recorded on different tracks. If this switch is set to ON when such a tape is played back, both the Hi-Fi sound and normal sound can be heard simultaneously.
Since the sound may be muffled if this switch is set to ON for those parts of the tape where insert editing or audio dubbing editing was not performed, the switch is normally kept at the OFF position.

㉕ INPUT SELECT switch
Use this switch to select the connectors corresponding to the type of signals supplied by the external unit.

S-VIDEO:
For recording signals supplied through the S-VIDEO IN and AUDIO IN connectors.

LINE:
For recording signals supplied through the VIDEO IN and AUDIO IN connectors.

㉖ TAPE SELECT switch
When this is set to the position corresponding to the type of cassette used, the remaining tape time is displayed correctly.

~T120:
For T30, T60, T90 and T120 cassettes.

T140~T160:
For T140 and T160 cassettes.

㉗ SHUTTLE ring
Use this to vary the playback speed in the fast forward or rewind direction.

㉘ JOG dial
Use this to find a particular image while advancing the tape one frame at a time.

㉙ JOG/SHUTTLE button
Use this to switch to the JOG/SHUTTLE mode. Normal play is resumed if the PLAY button is pressed in the JOG/SHUTTLE mode or if the JOG/SHUTTLE button is pressed again in the still-picture play mode.

㉚ DISPLAY button
Each time this button is pressed, the display changes by one item in the following sequence: clock display → counter display → remaining tape display.

㉛ CLOCK button
Use this button to set the date and time.

㉜ PROG/CHECK button
Use this button to set, clear or check timer-programmed recordings.

㉝ TRACKING/V-LOCK [+/–] buttons
Use these buttons to adjust the tracking and the vertical hold. They are also used to set the time and input the timer-programmed recording data.

Manual tracking adjustment:
Keep pressing the [+] or [–] button to adjust the tracking. This will minimize the color and noise distortion which cannot be eliminated by automatic digital tracking control.
When playing a tape which was recorded on another VTR, the manual tracking adjustment may be performed in order for the optimum Hi-Fi sound and picture quality to be reproduced.

Low-speed tracking adjustment
Use the buttons to minimize the noise bar distortion which appears during still-picture playback or low-speed playback (JOG/SHUTTLE playback). Set the unit to low-speed playback, and use the [+] or [–] button to adjust the tracking.

Vertical hold adjustment
Use the [+] or [–] button to minimize the vertical jitter which occurs during still-picture playback.

㉞ NEXT button
Use this button to store the input data in the memory and change the display segments. Each time it is pressed, the flashing date display changes by one item in the following sequence: year → month → day → hour → minute.

㉟ AUTO TRACKING button
This unit is equipped with an automatic digital tracking control function.

㊱ ZERO STOP button
When this button is pressed in the stop mode, the tape will stop near the "0:00.00" counter display after it has been fast forwarded or rewound.

㊲ AUDIO DUB button
Use this button for audio dubbing.
(The AUDIO DUB display lamp lights.)

㊳ INSERT button
Use this button for insert editing.
(The INSERT display lamp lights.)

㊴ TIMER REC button
Use this button to set timer-programmed recording to standby and to release it from standby. Normal operations cannot be performed during timer-programmed recording standby: they can be performed when the button is pressed again.
If this button is pressed when timer recording data has not been programmed or when a cassette has not been inserted, "⊡" flashes while at the same time an alarm sounds to announce that timer recording is not possible.

㊵ COLOR B/W switch
COLOR: The color mode is forcibly set at this position. The burst signal is superimposed onto the output signals.
B/W: The monochrome mode is forcibly set at this position. The color signals including the burst signal are removed from the output signals.

㊶ AUTO/WIDE/NOR switch
AUTO: When WIDE video signals have been detected, pictures are automatically played or recorded in the WIDE format.
WIDE: Pictures are played or recorded in the WIDE format regardless of whether they are normal or WIDE pictures.
NOR: Pictures are played or recorded in the normal format regardless of whether they are normal or WIDE pictures.

㊷ RESET switch
This is used to reset the counter display to "0:00.00."

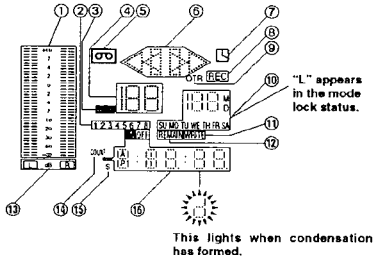
㊸ LINEAR AUDIO REC switch
L+R: The audio signals of the unit, which has been connected to the audio input [L/CH1] and [R/CH2] connectors on the rear panel, are recorded on the normal (LINEAR) audio track.
LINEAR: The audio signals of the unit, which has been connected to the audio input [LINEAR] connector on the rear panel, are recorded on the normal (LINEAR) audio track.

㊹ Cassette compartment

㊺ PUSH-OPEN
Push here to open the operation panel.

㊻ S-VHS display lamp

㊼ Multi-function display



① Audio level meter
② Timer program number
③ Wide 16×9 playback
④ Tape speed display (2H/6H)
⑤ Cassette-in display
⑥ Tape operation display
⑦ Timer recording display
⑧ Recording display
⑨ One-touch time recording (OTR) display
⑩ Date display
⑪ VISS write display
⑫ Remaining tape display
⑬ Audio track display
⑭ Tape counter mode display
⑮ Index search display
⑯ Clock/tape counter display

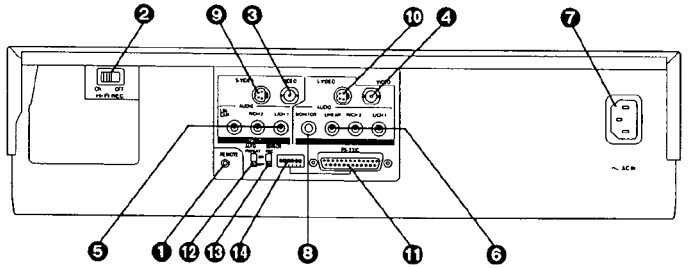
㊽ TBC display lamp

㊾ AUDIO DUB display lamp

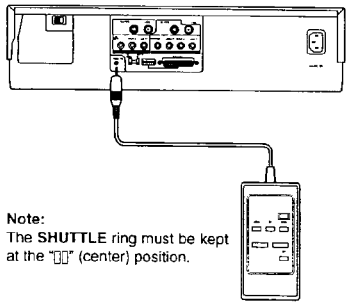
㊿ JOG/SHUTTLE display lamp

(51) INSERT editing display lamp

Rear panel parts



❶ REMOTE connector
When the AG-A11 remote controller purchased separately is connected, the unit can be operated using the function buttons on the remote controller instead of the ones on the unit.



Note:
The **SHUTTLE** ring must be kept at the "□□" (center) position.

❷ Hi-Fi REC switch
The Hi-Fi sound and normal sound are recorded as follows.
ON: The Hi-Fi sound and normal sound are recorded simultaneously.
OFF: Only the normal sound is recorded.

When the Hi-Fi REC switch is at the OFF position, **AUDIO OUT SELECT** on the front panel can be switched regardless of whether the Hi-Fi REC switch is set to ON or OFF but Hi-Fi sound cannot be recorded.

❸ VIDEO IN connector
Use this for connection with another VTR or a unit with a video output connector.

❹ VIDEO OUT connector
Use this for connection with another VTR or a TV set with a video input connector.

❺ AUDIO IN connectors
Use these for connection with another VTR or audio component.

❻ AUDIO OUT connectors
Use these for connection with another VTR or audio component or for connection with a TV set equipped with audio input connectors.

❼ AC IN socket
Connect the power cord to this socket.

❽ MONITOR connector (PHONO)
Use this to monitor the audio output.
The audio signals from the MONITOR connector are output as follows depending on how the **AUDIO OUT** button is set.

What appears on the display	Audio signals which are output from the MONITOR connector
L R	Hi-Fi CH1
L	Hi-Fi CH1
R	Hi-Fi CH2
No display	Normal audio

Parts and their functions

⑨ S-VIDEO IN connector
Use this for connection with another VTR or a TV set equipped with an S-Video output connector.

⑩ S-VIDEO OUT connector
Use this for connection with another VTR or a TV set equipped with an S-Video input connector.

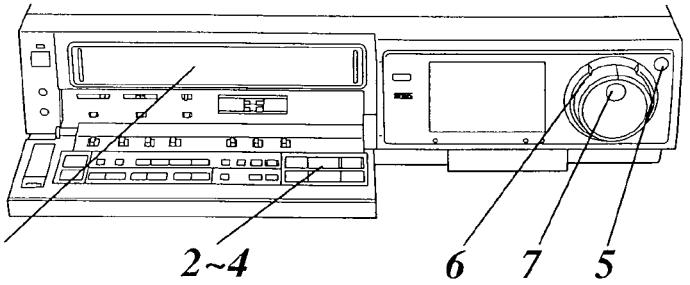
⑪ RS-232C connector
Editing between two VTRs can be conducted speedily and efficiently by connecting the editing controller (AG-A571) purchased separately to this connector.
The unit can be operated from a personal computer by connecting it to the computer using the RS-232C cable which is also sold separately.
Note:
Do not turn on the VTR's power until the RS-232C cable has been connected.

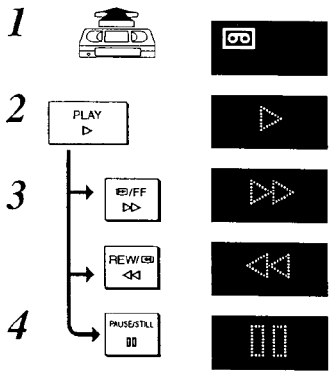
⑫ AUTO REPEAT switch
Set this to ON for auto repeat playback.
Note:
The **SENSOR REC** switch must be set OFF. Also, use the **DISPLAY** button to set the display to "clock display" or "counter display."

⑬ SENSOR REC switch
Set this to ON for sensor recording.

⑭ RS-232C setting switches
Use these switches to set the RS-232C communication parameters.

Playback





Use the appropriate buttons to activate the following functions.
- Normal playback
- Cue (playback combined with fast forwarding)
- Review (playback combined with rewinding)
- Still-picture playback
- Shuttle operations which vary the playback speed in small increments between still-picture playback and cue or review
- Jog operations which accurately locate a particular image

The VTR cylinder continues to rotate for about 20 minutes even after the stop mode has been established. This enables playback pictures to be viewed instantly even from the stop mode during this time.

Playback procedure

1. Insert the pre-recorded cassette tape.
If a cassette tape has already been inserted, press the POWER button to turn on the unit's power.

Normal playback

2. Press the PLAY button to start normal playback.

Cue/review

3. The tape is cued or reviewed while the FF or REW button is held down.
- This function is useful for locating a specific scene during normal playback.
- When the **FF** or **REW** button is pressed for an instant during normal playback, cue or review is started.
  Normal playback is restored when the **PLAY** button is pressed.

■ **Counter display and editing accuracy**
Bear in mind that the counter value may be slightly off when an operation accompanied by a change in mode such as from CUE to REV, REV to CUE or REV to PLAY has been performed.

Playback

Still-picture playback

4. A still-picture can be viewed by pressing the **PAUSE/STILL** button during normal playback. Normal playback is restored when the **PLAY** or **PAUSE/STILL** button is pressed.

Jog/shuttle playback

5. Press the **JOG/SHUTTLE** button. (The still-picture playback mode is now established.)

6. Turn the **SHUTTLE** ring to select the desired playback speed in the forward or reverse direction.

7. Turn the **JOG** dial to locate a particular image.

Other

- When the **DISPLAY** button is pressed, the approximate remaining tape is displayed in hours and minutes. For a display of a more accurate amount of the remaining tape, set the **TAPE SELECT** switch to the position which corresponds with the type of cassette tape used.
  -T120:
  For T30, T60, T90 and T120 cassettes.
  T140-T160:
  For T140 and T160 cassettes.
- To listen to the sound during cue or review, set the **SEARCH SOUND** selector to ON.

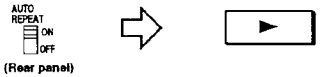
Playback images are sometimes distorted when the tape movement becomes unstable, i.e. when fluctuations occur in the tape transport system operation or in the tape speed.
The picture quality can be improved in such cases by setting the **TBC** switch to ON.
When some pre-recorded tapes are played back, the playback images may shake vertically. In a case like this, set the **TBC** switch to OFF.
The TBC function works only during normal playback.

Notes:
- The unit switches to normal playback when cue or review continues for over 10 minutes.
- The unit switches to the stop mode when still-picture playback continues for over 5 minutes.
- Horizontal noise bars or distortion may arise during cue or review: this is normal and not indicative of a malfunction.
- When a tape is played in the 6H (triple) mode, horizontal noise bars or distortion may arise or the color may become unstable and monochrome images may appear.
- When a tape recorded on another VTR is played back in the 6H (triple) mode, the picture and sound quality will deteriorate slightly even if the tracking has been adjusted.

Auto repeat playback

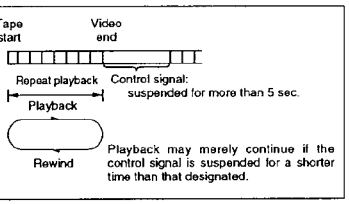
Repeat playback between tape start and video end
Proceed as follows to initiate repeat playback between the tape start and end of the video signals. (Unless the video signals come to an end on the tape, the tape will be automatically played from the tape start to tape end.)

1. Set the **AUTO REPEAT** switch to ON.
2. Press the **PLAY** button.



Set the AUTO REPEAT switch to ON.

Press the PLAY button.


Tape start
Video end
Repeat playback
Playback
Control signal: suspended for more than 5 sec.
Rewind
Playback may merely continue if the control signal is suspended for a shorter time than that designated.

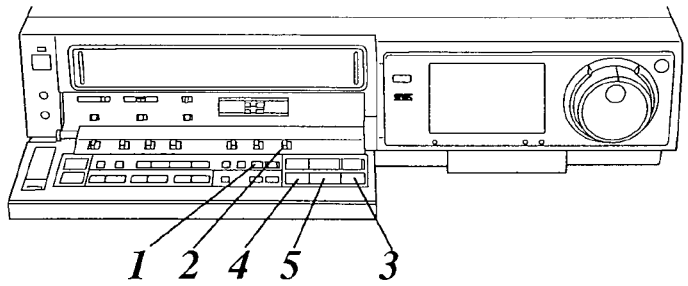
Notes:
- Keep the **SENSOR REC** switch at OFF during auto repeat playback.
- Use the **DISPLAY** button to set the display to "clock display" or "counter display."
- The picture may be impaired if repeat playback is conducted over and over again in a short section of tape.
  The picture quality may deteriorate if repeat playback is continued for an extended period of time. Therefore, initiate auto head cleaning by ejecting the tape.

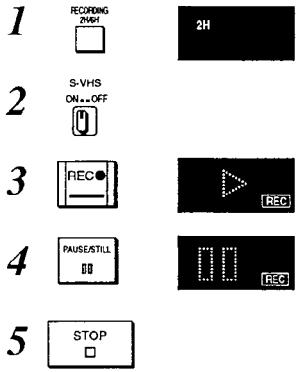
Use of the following Panasonic video tapes is recommended for repeat playback:

VHS tapes:
- NV-T30, T60, T120, T160 series

S-VHS tapes:
- NV-ST60, ST120, ST160 series

Simple recording





Insert a cassette with its accidental erasure prevention tab intact. (If a cassette tape has already been inserted, press the **POWER** button to turn on the unit's power.)

Recording procedure

1. Select the desired speed using the **RECORDING 2H/6H** button.
2H: Standard recording
6H: Triple recording

2. Set the **S-VHS** selector to ON or OFF.
ON: For recording with the S-VHS system (the S-VHS display lamp lights).
OFF: For recording with the VHS system (the S-VHS display lamp does not light).
- A VHS cassette is automatically recorded with the VHS system regardless of the position of this selector switch.

3. Press the **REC** button to start the recording.
- If the cassette's accidental erasure prevention tab has been broken out, "REC" flashes and an alarm sounds to announce that recording is not possible.

4. To suspend the recording temporarily, press the **PAUSE/STILL** button.
Recording resumes when the button is pressed again.
- When the pause mode continues for over 5 minutes, the VTR is set to the stop mode in order to protect the tape and video heads.

5. Press the **STOP** button to stop the recording.

Simple recording

Adjusting the Hi-Fi audio recording level

Normally, the **Hi-FI REC LEVEL** control is kept at the "5" position which is the middle of the range. Adjust it in such a way that the audio level display is set to +4 dB at the peak.

- The level is automatically adjusted for normal sound.

Sensor recording

1. Set the **SENSOR REC** switch to ON.

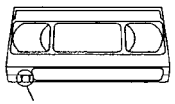
(Rear panel)

2. Press the **POWER** button to turn off the power. Check that the POWER indicator is off.

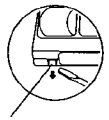
3. When video signals (LINE input) are supplied, the unit's power is automatically turned on, and recording starts. As soon as the video signals are no longer supplied, recording is stopped and the unit's power is turned off.

(Auto repeat recording)
Recording will continue to the end of the tape unless the video signals are cut off. When the tape comes to the end, it is rewound to the beginning, and recording commences again.

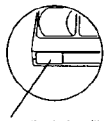
Concerning the accidental erasure prevention tab


Accidental erasure prevention tab

To prevent accidental erasure


Break out the tab using a screwdriver.

To re-record


Cover the hole with adhesive tape.

Automatic functions

The unit has the automatic functions described below.

Automatic power ON
The unit's power is automatically turned on when a cassette tape is inserted.

Automatic playback
When a cassette tape without its accidental erasure prevention tab is inserted, playback starts straightaway.

Automatic rewinding
When the tape reaches its end during playback or recording, it is automatically rewound to the beginning. (This does not happen with OTR and timer recording.)

Ejection of cassette when power is turned off
Even when the power is off, it can be turned on by pressing the **EJECT** button, and the cassette is automatically ejected. After the cassette has been ejected, the power is automatically turned off.

Auto head cleaning
Tape particles and dust are removed from the video heads to ensure the best picture quality at all times. This function is activated when a cassette tape is inserted and when it is ejected. A mechanical noise may be heard while this function is working: this is normal and not indicative of a malfunction.

Index search

The first position on a recording where the index (VISS) signal is provided can be located speedily. The index signal is automatically recorded, and "WRITE" appears on the display for several seconds in the following cases.

- When the recording is started by the REC button
- When the REC button is pressed during recording
- When timer recording or OTR recording is started

The index signals can be used to access up to 20 specific scenes in both the forward and reverse directions.

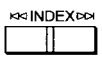
Preparation:

Press the **PLAY** button or **STOP** button.

Example:
Accessing the second picture in the forward direction

Operation:

Press the **INDEX [▷▷I]** button twice to input the number of the index signal.
Normal playback is started when the input index signal is reached.



- Press the **INDEX [I◁◁]** button to access a picture which was recorded in the reverse direction.

Notes:

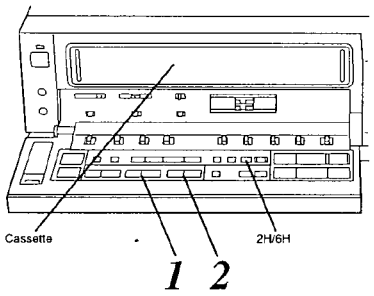
- An interval of at least 3 minutes with 2H (standard mode) recording or at least 5 minutes with 6H (triple mode) recording must be left between two index signals.
- The search may not work properly if there is a long blank (unrecorded) section or if a cassette which has been repeatedly recorded is used.

OTR (one-touch timer recording)

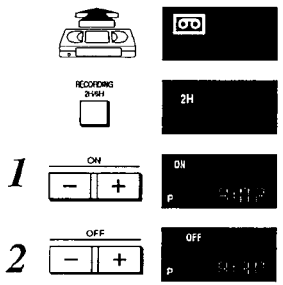
OTR is a function for recording input signals for up to a 24-hour period.

Preparations:

- Insert a cassette with its accidental erasure prevention tab intact. (If a cassette tape has already been inserted, press the **POWER** button to turn on the unit's power.)
- Select 2H (standard mode) or 6H (triple mode) as the desired speed using the **RECORDING 2H/6H** button.



Example: OTR from 8:02 PM to 8:30 PM



OTR procedure:

The time display changes in 1-minute increments when the **ONE-TOUCH TIMER REC ON [+/–]** buttons or **OFF [+/–]** buttons are pressed. When the buttons are held down, the time display changes in 10-minute increments.

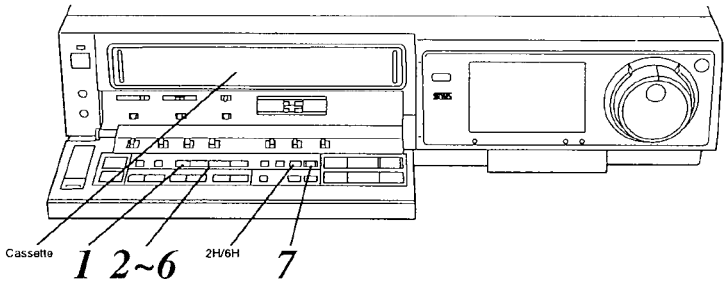
1. Press the **ONE-TOUCH TIMER REC ON [+]** or **[–]** button to set the OTR start time.
   Omit this step if OTR is to be started immediately.
   - If a cassette with its accidental erasure prevention tab broken out has been inserted, "⊡" flashes and an alarm sounds to announce that recording is not possible.
2. Press the **ONE-TOUCH TIMER REC OFF [+]** or **[–]** button to set the OTR end time.
   - If, once the OTR start time has been set, the **ONE-TOUCH TIMER REC OFF [+]** or **[–]** button is not pressed within 8 seconds to set the OTR end time, the start time will be cleared and the normal display restored.

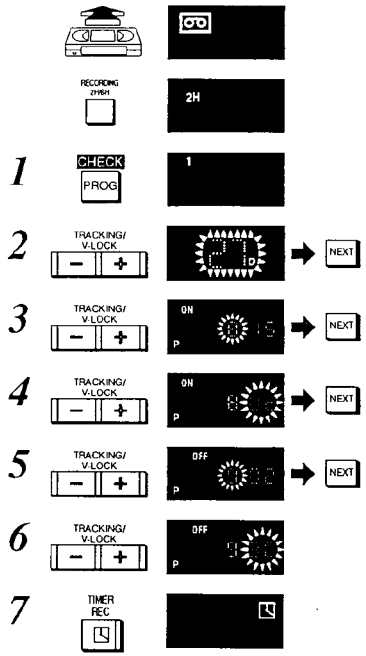
When OTR is completed, the power is automatically turned off.

Notes:

- Press the **POWER** button to suspend OTR.
- The OTR start or end time can be changed before recording starts.
- The OTR end time can be changed during recording.
- Do not allow the OTR function to overlap a programmed timer recording. OTR always takes precedence over a timer recording.
- The OTR setting times cannot be checked.
- Once OTR has been set, the present time cannot be checked.

Timer-programmed recording





Up to 8 programs can be programmed for the timer recording of a specific period within the space of one month and for periods on a daily or weekly basis.
Three different modes of daily programming are available.

(1) From Monday to Friday
(2) From Monday to Saturday
(3) From Sunday to Saturday

Example:
Programming the unit to record from 8:02 PM to 9:30 PM on October 27 as timer program No.1 (programming performed on October 10)

Preparations:

- Insert a cassette with its accidental erasure prevention tab intact. (If a cassette tape has already been inserted, press the **POWER** button to turn on the unit's power.)
- Select 2H (standard mode) or 6H (triple mode) as the desired speed using the **RECORDING 2H/6H** button.

Timer recording procedure

1. Press the **PROG/CHECK** button to select the timer program number.
   - Timer program number "1" appears.
     (Each time the **PROG/CHECK** button is pressed, the timer program number changes.)

2. Press the **TRACKING/V-LOCK [+]** or **[–]** button to set the day on which the timer-programmed recording is to start, and then press the **NEXT** button.
   - For daily programmed recording, keep pressing the **TRACKING/V-LOCK [–]** button until the setting for the desired daily recording mode appears.
   - For weekly programmed recording, keep pressing the **TRACKING/V-LOCK [–]** button until the setting for the day of the week concerned appears.

3. Press the **TRACKING/V-LOCK [+]** or **[–]** button to set the hour of the start time, and then press the **NEXT** button.

4. Press the **TRACKING/V-LOCK [+]** or **[–]** button to set the minute of the start time, and then press the **NEXT** button.

5. Press the **TRACKING/V-LOCK [+]** or **[–]** button to set the hour of the end time, and then press the **NEXT** button.

6. Press the **TRACKING/V-LOCK [+]** or **[–]** button to set the minute of the end time. The NEXT button need not be pressed.
   - Repeat steps *1* to *6* if other timer recordings are to be programmed in succession.

7. Press the **TIMER REC** button to turn the timer-programmed recording ON.
   - "⏲" appears on the display, and normal operations can no longer be conducted.
   - To conduct a normal operation, press the **TIMER REC** button to turn the timer-programmed recording OFF. If the button is pressed again, the timer will be turned ON.

Checking a timer-programmed recording

Press the **PROG/CHECK** button to select the number of the timer program to be checked. The date and start and end times are displayed for about 12 seconds.

Canceling a timer-programmed recording

1. Press the **TIMER REC** button to turn the timer-programmed recording OFF.
   (Check that "⏲" does not appear on the display.)

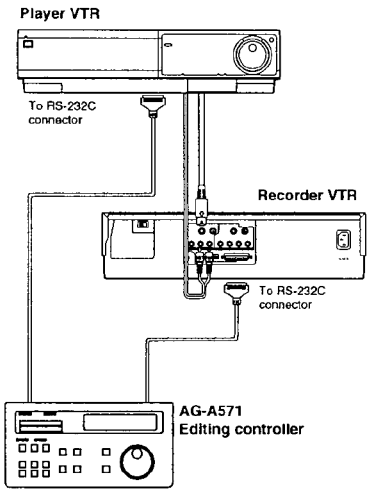
2. Press the **PROG/CHECK** button to select the number of the timer program to be canceled.

3. Press the **TRACKING/V-LOCK [+]** and **[–]** buttons together for at least 3 seconds.

Note:
Data, which is not cleared even after the start time and date in the programmed data have come and gone, is automatically cleared when the power is turned OFF at any time past 4:00 AM two days later.

Editing using an editing controller.

If the AG-A571 editing controller (purchased separately) is used, both a player VTR and recorder VTR can be controlled directly from the controller to perform assemble editing, insert editing, audio dubbing and other such operations both speedily and efficiently.



Preparations:

- As shown in the figure, connect the player VTR and recorder VTR to the AG-A571 editing controller.

- Set the **INPUT SELECT** switch to the position which corresponds to the connectors on the player VTR to which the unit is connected.
  S-VIDEO: When the unit has been connected to the S-VIDEO IN and AUDIO IN connectors
  LINE: When the unit has been connected to the VIDEO IN and AUDIO IN connectors

- Set the **DETAIL/NOR/EDIT** switch to **EDIT**.

- Set the **Hi-Fi REC** switch to ON. Hi-Fi sound will not be edited if this switch is set to OFF.

- Use the **DISPLAY** button to set the display to clock or counter.

- Insert the pre-recorded cassette tape into the player VTR, and insert the recording cassette tape into the recorder VTR.

- Set the **SHUTTLE** ring to the "▯▯" (center) position, and set the **MODE LOCK** switch to ON.

Operation:

Control both the player and recorder VTRs using the AG-A571 editing controller.

Read the Instruction Manual of the AG-A571 carefully.

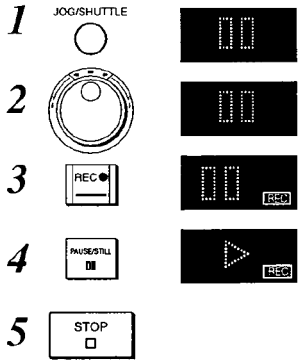
Note:
Upon completion of editing, the **DETAIL/NOR/EDIT** switch must be returned to the **NOR** position so that normal operation can be performed.

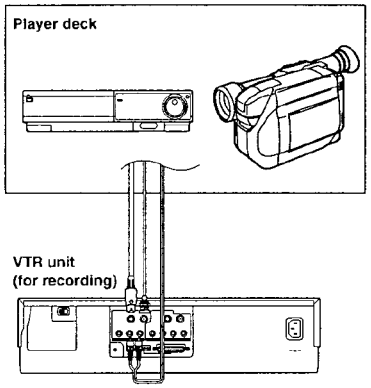
Assemble editing using the VTR unit controls

New scenes from a number of video recordings can be added onto the end of a recording without disturbing the scene-to-scene continuity or excessive erasure.

Preparations:

- Connect the player deck and the VTR unit as shown in the figure.
- Set the **INPUT SELECT** switch to the position which corresponds to the connectors on the player VTR to which the unit connected.
  S-VIDEO: When the unit has been connected to the S-VIDEO IN and AUDIO IN connectors
  LINE: When the unit has been connected to the VIDEO IN and AUDIO IN connectors
- Set the **DETAIL/NOR/EDIT** switch to **EDIT**.
- Set the **HI-FI REC** switch to ON. Hi-Fi sound will not be edited if this switch is set to OFF.
- Insert the pre-recorded cassette tape into the player VTR, and insert the recording cassette tape into the recorder VTR.





Operation:

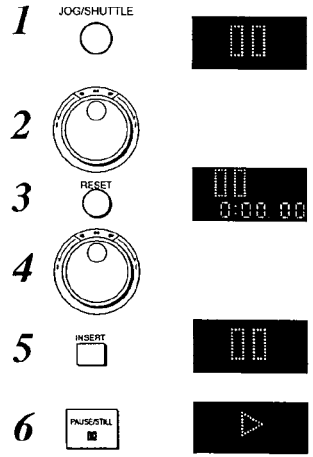
1. Press the **JOG/SHUTTLE** button to set the JOG/SHUTTLE mode.
2. Locate the edit start position using the **JOG/SHUTTLE** dial.
3. Press the **REC** button to establish the recording standby mode.
4. Press the **PAUSE/STILL** button to start recording.
5. Press the **STOP** button to stop recording.

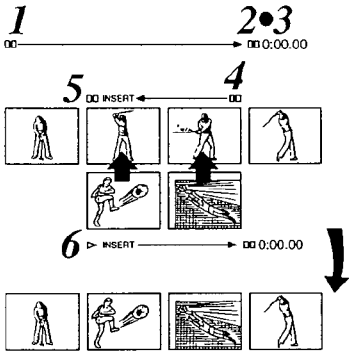
Insert editing using the VTR unit controls

Parts of a pre-recorded tape can be exchanged with new scenes without disturbing the scene-to-scene continuity.
Insert editing is not possible with blank parts of a tape. Use the assemble editing function instead for inserting onto unrecorded parts of a tape.

Preparations:

Follow the same preparations as for assemble editing (see page 23).





Operation:

1. Press the **JOG/SHUTTLE** button.
2. Use the **SHUTTLE** ring and **JOG** dial to locate the edit out (end) position, and set to the still-picture playback mode.
3. Press the **RESET** switch to reset the tape counter to "0:00.00."
4. Use the **SHUTTLE** ring and **JOG** dial to locate the edit in (start) position, and set to the still-picture playback mode.
5. Press the **INSERT** button. (The INSERT display lamp now lights.)
   - Press the **AUDIO DUB** button when the normal audio track is to be exchanged with new sound. (The AUDIO DUB display lamp lights.)
6. Press the **PAUSE/STILL** button to start insert editing.
   - When the tape reaches the edit out position (when "0:00.00" appears on the counter display), insert editing stops, and the mode is changed to still-picture playback.

Notes:

- Recording in the **2H** (standard) mode is recommended when the insert editing function is used.
- When the **HI-FI REC** switch is at the OFF position, the original sound will be erased and no new sound will be recorded either.

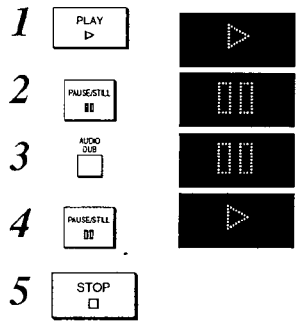
Editing

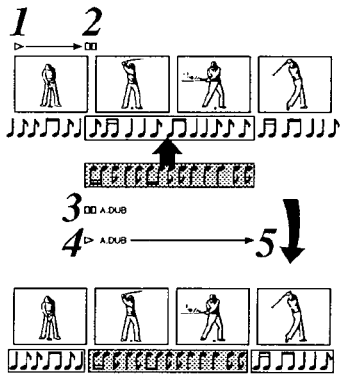
Audio dubbing using the VTR unit controls

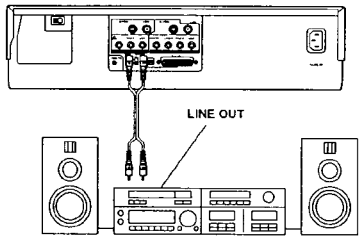
Background music, narration or other new sound can be recorded onto the normal audio track of a pre-recorded tape.

Preparations:

- Connect the component which is to supply the sound.
- Select the applicable input connectors.
- Insert the cassette tape on which the audio dubbing sound is to be recorded into the VTR unit.







Connect to a stereo amplifier, etc.

Operation:

1. Press the **PLAY** button to locate the start position where the new sound is to be recorded.
2. Press the **PAUSE/STILL** button at the recording start position.
3. Press the **AUDIO DUB** button. (The AUDIO DUB display lamp lights.)
4. Press the **PAUSE/STILL** button to start recording.
5. Press the **STOP** button to stop recording.

Note:

The new sound will be recorded onto the tape's normal audio track, and the original sound will remain on the Hi-Fi audio tracks. The sound recorded by audio dubbing is monaural.

- To listen to the sound recorded by audio dubbing, press the **AUDIO OUT** button to select the normal audio track.
- To listen to the original sound, select the Hi-Fi audio tracks.
- To listen to the original sound and the sound added by audio dubbing, set the **HI-FI/LINEAR MIX** switch to ON.
- When inputting the sound to [L/CH1] and [R/CH2], set the **LINEAR AUDIO REC** switch to **L+R**; when inputting the sound to LINEAR, set the switch to **LINEAR**.

RS-232C specifications

The following functions can be controlled by using the RS-232C interface adapter.

■ **Basic operations**

EJECT	INSERT
POWER ON/OFF	SEARCH PAUSE
STOP	SEARCH SPEED UP
PLAY	SEARCH SPEED DOWN
REC/PLAY	FORWARD/ADVANCE
FF	REVERSE/ADVANCE
REW	REVERSE/PLAY
PAUSE	POWER/ON
AUDIO/DUB	POWER/OFF
COUNTER RESET	DIRECT SEARCH (±1/30, ±1/5, ±1, ±5, ±7)

■ **Simple editing function**

Video/audio/audio-and-video insert editing can be conducted as far as a specific frame position.

■ **Search function**

The position of a specific frame can be searched.

■ **Checking of statuses**

The present VTR mode and interface status can be checked.

■ **Other**

- On-line check
- Counter calibration

1. Hardware specifications

(1) Interface specifications

Connector: D-Sub 25-pin DCE specifications

Pin No.	Signal	Description
1	FG	Frame GND
2	TXD (receiving)	Received Data
3	RXD (sending)	Transmitted Data
4	RTS	Request To Send
5	CTS	Clear To Send
6	DTR	Data Terminal Ready
7	GND	GND

Example of wiring connections

PC side		VTR side
1 FG	———	1 FG
2 TXD	——→	2 TXD
3 RXD	←——	3 RXD
4 RTS	——→	4 ┐
5 CTS	←——	5 ┘
6 DSR	←——	6 DTR
7 GND	———	7 GND

(2) Communication parameters

This unit's communication parameters are set to 9600 bps (baud rate), 7 bits (bit length), 1 bit (stop bit) and odd parity.
Ensure that the communication parameters of your personal computer match the settings listed above. If the unit's parameters need to be changed, they can be changed as shown below but your dealer must be consulted about this before the changes are made.

■ **Setting the baud rate**

	SW 5
OFF	9600 bps
ON	4800 bps

■ **Setting the communication parameters**

	Bit Length SW 1	Stop Bit SW 2	Parity Check	
			SW 3	SW 4
OFF	7 Bit	1 Bit	YES	ODD
ON	8 Bit	2 Bit	NONE	EVEN

2. Software specifications

(1) External interface specifications

Communication system	ASYNCHRONOUS FULL DUPLEX
Baud rate	4800 bps/9600 bps
Bit length	8 BIT/7 BIT
Stop bit	1 BIT/2 BIT
Parity	NONE/ODD/EVEN

■ The factory settings are 9600 bps, 7 bits, 1 stop bit and odd parity.
■ The unit's receive buffer has a 128-byte capacity.

(2) Sending format (personal computer → VTR)

■ **Data format**

[STX] [discrimination] [:] [data]
02H xx xx xx 3AH xx

([:] [discrimination] [:] [data]...) [ETX]
3BH xx xx xx 3AH xx 03H

20H < xx < 7IH (xx = Hexadecimal character code)

- ( )
  The parentheses indicate that what is inside them may be omitted.
- **discrimination**
  This is the command identifier (3 bytes).
- :
  This is a delimiter between command and data.
- **data**
  A data code is added when so required.

1) A send command must start with STX (character code 02H).
   Discrimination, which follows, identifies the command. If necessary, data is added after the colon. The data must end with ETX (character code 03H).
2) When STX is re-sent before EXT is send, the receive buffer inside the VTR is cleared (all data received so far is lost), the re-received STX is placed at the head, and the data is processed anew.

(3) Receiving format (VTR → personal computer)

The VTR responds to a send command with data in the format below.

1) The response (return) data format used when a command from the personal computer has been properly received by the VTR is as follow.

[STX] [DATA] .... [ETX]
02H xx 03H

example :

Send command	Return data = receive data
[STX] QOP [ETX] →	[STX] OEJ [ETX]
[STX] OPL [ETX] →	[STX] OPL [ETX]
[STX] QCD [ETX] →	[STX] CD □□□□□□□□□□ [ETX]

2) When the data is incorrect or there is some trouble with the VTR during reception, details describing the reason why the data cannot be received are returned using the following format.

[STX] E R □ [ETX]
(02H) (45H) (52H) (xx) (03H)

- **Contents of □**
  D (44H):
  This signifies that the processing by the VTR has been disabled by condensation.
  E (65H):
  This data announces that a command which cannot be processed by the VTR has been received.
  One of the following causes may be to blame for this.
  - An unsupported command has been received.
  - The wrong data code is used.
  - The data is outside the permitted range.
  - A command was received in a mode (playback during counter search, etc.) in which commands cannot be received.

3) In the case of a communication error, the VTR returns data starting with NACK (negative acknowledge character code 15H) when the error is detected. If the VTR is in the process of sending data when it receives the communication, NACK is returned after the sending of the data has been completed. In this case, the VTR destroys all the error data which was received.

[NACK] □
(15H) (xx)

- **Contents of □**
  4 (34H) : Over Run Error
  1 (31H) : Parity Error
  3 (33H) : Framing Error

(3) List of commands

1) BASIC OPERATION COMMAND (KEY COMMAND)

■ **KEY COMMAND**

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
OSP (STOP)	All operations are stopped, and the stop mode is established.	[STX] OSP [ETX]	[STX] OSP [ETX]
OEJ (EJECT)	The cassette is ejected.	[STX] OEJ [ETX]	[STX] OEJ [ETX]
OPL (PLAY)	This is the playback command (tape is played at normal speed).	[STX] OPL [ETX]	[STX] OPL [ETX]
ORW (REWIND)	Rewind or review command.	[STX] ORW [ETX]	[STX] ORW [ETX]
OFF (FAST FORWARD)	Fast forward or cue command.	[STX] OFF [ETX]	[STX] OFF [ETX]
OPA (PAUSE)	Pause and pause release command.	[STX] OPA [ETX]	[STX] OPA [ETX]
ORC (REC)	Recording command. When the cassette's tab has been broken out, the tape mark flashes and a warning tone is emitted.	[STX] ORC [ETX]	[STX] ORC [ETX]
OAF (ADVANCE FRAME)	Frame advance (forward direction) command.	[STX] OAF [ETX]	[STX] OAF [ETX]
OAR (ADVANCE REVERSE FRAME)	Frame advance (reverse direction) command.	[STX] OAR [ETX]	[STX] OAR [ETX]
OPR (PLAY REVERSE)	Reverse playback command.	[STX] OPR [ETX]	[STX] OPR [ETX]
OSL (SLOW MODE SET)	Command for pre-processing which is executed before the slow speed is controlled. It should be sent only once before the OSD or OSU command is sent.	[STX] OSL [ETX]	[STX] OSL [ETX]
OSD (SPEED DOWN)	Command which controls the playback speed in the negative (←) direction.	[STX] OSD [ETX]	[STX] OSD [ETX]
	–9, –7, –5, –1, –1/5, –1/10, –1/30, SLOW PAUSE, +1/30, +1/10, +1/5, +1, +5, +7, +9 **OSD command** Each time the OSD command is sent, the speed is changed in the negative (←) direction by one setting. Leave an interval of at least 150ms before sending this command for the second and subsequent times. When the maximum negative speed (–9× normal speed) is reached, the speed cannot be changed any further.		

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
OSU (SPEED UP)	Command which controls playback speed in the positive (→) direction.	[STX] OSU [ETX]	[STX] OSU [ETX]
	−9, −7, −5, −1, −1/5, −1/10, −1/30, SLOW PAUSE, +1/30, +1/10, +1/5, +1, +5, +7, +9 → **OSD command** Each time the OSU command is sent, the speed is changed in the positive (→) direction by one setting. Leave an interval of at least 150ms before sending this command for the second and subsequent times. When the maximum positive speed (+9× normal speed) is reached, the speed cannot be changed any further.		

■ **INSERT COMMAND**

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
EIN (INSERT)	Insert pre-processing command. If this command is sent when the cassette's tab has been broken out, the tape mark flashes and a warning tone is emitted.	[STX] EIN [ETX]	[STX] EIN [ETX]
EAD (AUDIO DUB)	Audio dubbing pre-processing command. If this command is sent when the cassette's tab has been broken out, the tape mark flashes and a warning tone is emitted	[STX] EAD [ETX]	[STX] EAD [ETX]
EIT: DATA	Command which executes insert up to the specified position. When the position specified by data is reached, the insert operation is ended, and play pause mode is entered.	[STX] EIT : □□□ □□□□□ [ETX]	[STX] EIT [ETX]
	Counter data □ □ □□ □□ □□ Sign Hour Minutes Seconds Frame ↑ −: − sign +: blank **Example:** Insert up to 1 hour 12 min. 35 sec. 00 frame [STX] EIT : _ 1123500 [ETX] ↑ **A blank must be input here.** **Note:** The counter must be reset before sending the EIT command.		
EAT: DATA	Command which executes audio dubbing up to the specified position. When the position specified by the data is reached, the audio dubbing is ended, and play pause mode is entered.	[STX] EAT : □□□ □□□□□ [ETX]	[STX] EAT [ETX]
	Counter data □ □ □□ □□ □□ Sign Hour Minutes Seconds Frame ↑ −: − sign +: blank **Example:** Audio insert up to 1 hour 12 min. 35 sec. 00 frame [STX] EAT : _ 1123500 [ETX] ↑ **A blank must be input here.** **Note:** The counter must be reset before sending the EAT command.		

Note:
When the insert operation is activated using the EIN command, it will be cut off at the "0:00.00" counter setting.

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
EVT: DATA	Command which executes audio & video insert up to the specified position. When the position specified by data is reached, the audio & video insert operation is ended, and the play pause mode is established.	[STX] EVT : □□□ □□□□□ [ETX]	[STX] EVT [ETX]
	Counter data □ □ □□ □□ □□ Sign Hour Minutes Seconds Frame ↑ −: − sign +: blank **Example:** Audio & video insert up to 1 hour 12 min. 35 sec. 00 frame [STX] EVT : _ 1123500 [ETX] ↑ **A blank must be input here.** **Note:** The counter must be reset before sending the EVT command.		

■ **SEARCH COMMAND**

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
SMC (SEARCH MODE COARSE)	This command is for setting the mode in which search is conducted by the SCP or SCS command to the high-speed search mode. The search time is reduced since the search is performed at high speed by FF or REW but the search accuracy deteriorates slightly. If the search must be done accurately, use the following SMF command. When this command is sent once, the COARSE mode is retained by the VTR until the SMF command is sent. SMC is the default setting.	[STX] SMC [ETX]	[STX] SMC [ETX]
SMF (SEARCH MODE FINE)	This command is for setting the mode in which search is conducted by the SCP or SCS command to the high-accuracy mode. The speed of the shuttle search is controlled in accordance with the distance to the target, and the search is conducted with an accuracy of ±1 frame. When this command is sent once, the FINE mode is retained by the VTR until the SMC command is sent.	[STX] SMF [ETX]	[STX] SMF [ETX]
SCP: DATA	This command searches for the position specified by data, and establishes the play mode upon completion of the search. The search itself is conducted in the mode specified by the SMC or SMF command.	[STX] SCP : □□□ □□□□□ [ETX]	[STX] SCP [ETX]
	Counter data □ □ □□ □□ □□ Sign Hour Minutes Seconds Frame ↑ −: − sign +: blank **Example:** Search up to 1 hour 12 min. 35 sec. 00 frame, followed by play [STX] SCP : −1123500 [ETX]		

■ SEARCH COMMAND

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
SCS: DATA	This command searches for the position specified by data, and establishes the play pause mode upon completion of the search.	[STX] SCS : □□□ □□□□□ [ETX]	[STX] SCS [ETX]
		Counter data □ □ □□ □□ □□ Sign Hour Minutes Seconds Frame –: – sign +: blank Example: Search up to 1 hour 12 min. 35 sec. 00 frame, followed by pause [STX] SCS : _ 1123500 [ETX] ↑ A blank must be input here.	
SPT: DATA	This command plays the tape to the specified position, and then terminates playback by establishing the pause mode.	[STX] SPT : □□□ □□□□□ [ETX]	[STX] SPT [ETX]
		Counter data □ □ □□ □□ □□ Sign Hour Minutes Seconds Frame –: – sign +: blank	

■ SHUTTLE COMMAND

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
OSF: DATA (SHUTTLE FORWARD)	Forward direction shuttle command. The playback speed can be controlled from STILL to +7× normal speed.	[STX] OSF : □ [ETX]	[STX] OSF [ETX]
		The table below shows the correlations supported between the □ data and playback speed of the VTR.	

□ data	playback speed of VTR
0	STILL
1	+1/30
2	+1/5
3	+1
4	+5
5	+7

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
OSR: DATA (SHUTTLE REVERSE)	Reverse direction shuttle command. The playback speed can be controlled from STILL to –7× normal speed.	[STX] OSR : □ [ETX]	[STX] OSR [ETX]
		The table below shows the correlations supported between the □ data and playback speed of the VTR.	

□ data	playback speed of VTR
0	STILL
1	–1/30
2	–1/5
3	–1
4	–5
5	–7

■ Power supply functions

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
POW	Power ON/OFF command. Power ON/OFF can be controlled by toggling.	[STX] POW [ETX]	[STX] POW [ETX]
PON	Power ON command.	[STX] PON [ETX]	[STX] PON [ETX]
POF	Power OFF command.	[STX] POF [ETX]	[STX] POF [ETX]

■ Reading of statuses

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
QOP (OPERATION MODE)	Command which asks for the operation mode of the VTR. The VTR returns one of the codes in the following table when it receives this command.	[STX] QOP [ETX]	[STX] □□□ [ETX]

Operation mode of VTR	Code	Operation mode of VTR	Code
POWER OFF	POF	CUE	OSF
STOP	OSP	REV	OSR
EJECT	OEJ	SLOW	OSL
REWIND	ORW	SLOW PAUSE	OLP
FAST FORWARD	OFF	PLAY TO FRAME	SPT
RECORD	ORC	INSERT VIDEO TO FRAME	EIT
REC PAUSE	ORP	INSERT AUDIO TO FRAME	EAT
AUDIO DUBBING	EAD	INSERT AUDIO & VIDEO TO FRAME	EVT
A-DUB PAUSE	EAP	COUNTER CALIBRATE	CCL
PLAY PAUSE	OPP	PLAY	OPL
INSERT	EIN	REVERSE PLAY	OPR
INSERT PAUSE	EIP	DIRECT SEARCH	OF□
AUDIO & VIDEO INSERT	EVI		OR□
AUDIO & VIDEO INSERT PAUSE	EVP		

When the QOP command is executed:

- All commands except SMC, SMF, QOP, QOS, QCD, QID, CRT and RCK are commands which accompany VTR mode transition. When QOP is executed immediately after a command is sent, the previous mode is returned from the VTR since the processing inside the VTR was not entirely completed. This means that an interval of at least 300ms, which is required for the mode transition, must be left before sending the QOP command for the second and subsequent times.

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
QOS (OPERATION STATUS)	Command which asks for the processing status of the VTR. The VTR sends back the information in the form of a bitmap, as in the table below, which indicates the internal processing statuses. The table 1 information is first divided into 4 higher and 4 lower bits, and this 4-bit data is expressed in hexadecimal notation (0, 1, 2 and so on up to E, F), as shown by the bitmap example below. The format in which this information is sent back is as follows: after [STX] OPS come the ADRS0 higher data, ADRS0 lower data, ADRS1 lower data, and so on in this sequence. **Example of a bitmap** 0 1 0 0 1 0 1 0 4 A Hexadecimal notation	[STX] QOS [ETX]	[STX] OPS □□□□ □□□□□□ [ETX] □ —— DATA ADRS0H □ —— DATA ADRS0L □ —— DATA ADRS1H □ —— DATA ADRS1L □ —— DATA ADRS2H □ —— DATA ADRS2L □ —— DATA ADRS3H □ —— DATA ADRS3L □ —— DATA ADRS4H □ —— DATA ADRS4L

TABLE1 INTERNAL PROCESSING DATA

Address	7	6	5	4	3	2	1	0
DATA ADRS 0	0	0	0	0	0	0	0	0
DATA ADRS 1	0	0	0	0	0	0	6H: 1 2H: 0	0
DATA ADRS 2	REC INHIBIT TAB	CASSETTE IN	VV	0	VTR STATUS			
DATA ADRS 3	0	0	0	0	0	0	0	0
DATA ADRS 4	0	Undetermined	Undetermined	Undetermined	0	0	0	0

REC INHIBIT TAB : This bit is set to "1" for a tape whose tab has been broken out.
CASSETTE IN : This bit is set to "1" when the tape is loaded.
VV : This signifies that the playback screen has been selected. With a playback picture, the bit is set to "1."
VTR STATUS : Refer to the following table.

TABLE2 VTR STATUS DATA

BIT3 - BIT0	VTR STATUS	BIT3 - BIT0	VTR STATUS
1, 1, 1, 1	INSERT PAUSE or AV INSERT PAUSE	0, 1, 1, 1	POWER OFF
1, 1, 1, 0	INSERT or AV INSERT	0, 1, 1, 0	SLOW
1, 1, 0, 1	AUDIO DUB PAUSE	0, 1, 0, 1	CUE
1, 1, 0, 0	AUDIO DUBBING	0, 1, 0, 0	REVIEW
1, 0, 1, 1	RECORDING PAUSE	0, 0, 1, 1	FAST FORWARD
1, 0, 1, 0	RECORD	0, 0, 1, 0	REWIND
1, 0, 0, 1	PLAY PAUSE, SLOW PAUSE	0, 0, 0, 1	EJECT
1, 0, 0, 0	REVERSE PLAY, PLAY	0, 0, 0, 0	STOP

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
QCD	Command which asks for the current counter reading. The VTR returns a response at all times. **Example:** Counter value: 1 hour 25 min. 15 sec. 10 frames Search mode: FINE, PLAY [STX] CDFS _ 1251510 [ETX] ↑ **Blank**	[STX] QCD [ETX]	[STX] CD □□□□ □□□□□□ [ETX] □ : SEARCH MODE COASE ; C FINE ; F □ : Undetermined **Counter data** □ : Sign – : – Sign + : blank □ : Hour □ : Minutes □ : □ : Seconds □ : □ : Frames □ :

■ **Other commands**

Send command	Description of operation	Data sent from PC	Receive data returned from VTR
CRT	Counter reset command.	[STX] CRT [ETX]	[STX] CRT [ETX]
CCL	Counter calibration command. The counter is reset after the tape has been rewound to the start.	[STX] CCL [ETX]	[STX] CCL [ETX]
RCK	Command which checks whether communication has been established (whether the interface is working). When trouble has occurred in the VTR, NACK is returned; when the VTR is operating properly, RCK is returned.	[STX] RCK [ETX]	With normal operation: [STX] RCK [ETX] When trouble has occurred: [NACK]
QID	Command for referencing the model name of the VTR.	[STX] QID [ETX]	[STX] AG5710P [ETX]

Note:
If any key on the main unit or remote control or if a memory/search button is operated while the CCL command is being executed, the CCL operation will not be performed properly, and processing will be aborted. Do not operate these keys or buttons while this command is being executed.

■ **Counter display and editing accuracy**
Bear in mind that the counter value may be slightly off when an operation accompanied by a change in mode such as from CUE to REV, REV to CUE or REV to PLAY has been performed.

■ **Send commands and data returned from VTR**

Although the response data (see **item** 1) in **(3) Receiving format** on page 27) is returned when a command is sent properly, operation may not always correspond to the executed command even when the VTR has returned its response. For instance, when the play command ([STX] OPL [ETX]) is sent while the VTR's power is OFF, the return data ([STX] OPL [ETX]) will be sent back from the VTR but the playback mode will not be established because the power is off.
In a situation like this, the VTR status can be checked using the VTR status sense command ([STX] QOP [ETX]).

Care should be taken to avoid this kind of mistake because an error code will be returned from the VTR and it will take some time to pinpoint the cause of the error.

1. When the space has been omitted
   Example: [STX] SCS : 1425128 [ETX]
   In this example, the command is intended to search the position on the tape corresponding to 1 hour 42 minutes 51 seconds 28 frames and then establish the still mode. However, a space must be input after [:] for any search in the + direction.
   The correct format of the command is:
   [STX] SCS : _1425128 [ETX]
   ↑
   Space
2. When the allowable data range is exceeded
   Example: [STX] SPT : __110715 [ETX]
   ↑
   In this example, the second data (70) has been input incorrectly.
   A value from 0 to 59 must be input.
3. When any of the following commands has been sent, the commands which can be acknowledged until processing is complete are restricted. Bear in mind that with the exception of the special commands (any command which aborts processing) listed in the following table, an error code will be returned.

Send command	Special command which can be acknowledged while processing is in progress
[STX] EVT : □□□□□□□□ [ETX] [STX] EAT : □□□□□□□□ [ETX] [STX] EIT : □□□□□□□□ [ETX]	[STX] OSP [ETX] [STX] QOS [ETX] [STX] QID [ETX] [STX] QCD [ETX] [STX] RCK [ETX] [STX] QOP [ETX]
[STX] SPT : □□□□□□□□ [ETX] [STX] SCS : □□□□□□□□ [ETX] [STX] SCP : □□□□□□□□ [ETX] [STX] OSR : □ [ETX] [STX] OSF : □ [ETX] [STX] CCL [ETX]	[STX] OSP [ETX] [STX] RCK [ETX] [STX] OEJ [ETX] [STX] QID [ETX] [STX] QCD [ETX] [STX] QOP [ETX] [STX] QOS [ETX]

■ **Interval between a send command and the next send command**

The model AG-5710 is a VTR equipped with multiple microconrollers. Time (approx. 150ms) is required to execute any command which causes the system control microcontroller inside the VTR to perform some kind of processing since such a command entails communication between the RS-232C interface microcontroller and the system control microcontroller inside the VTR.
Listed to the right are the commands which cause the system control microcontroller to perform processing in some way: leave an interval of at least 150ms before sending another command from the personal computer.

- Commands which cause the system control microcontroller to perform processing in some way

OSP	OEJ	OPL	ORW
OFF	OPA	ORC	OAF
OAR	OPR	OSL	OSD
OSU	CRT	EIN	EAD
POW	PON	POF	

■ List of commands

The table below lists the send commands for each mode as seen from the personal computer side and their operations.
[STX] has the hexadecimal code of 02H,
[ETX] has the hexadecimal code of 03H,
and ":" has a hexadecimal code of 3AH.
The discrimination and data sections signify the ASCII codes which correspond to their symbols.

• BASIC OPERATION COMMAND

Send command	Data received from VTR	Description of operation
[STX] OSP [ETX]	Same as left	STOP
[STX] OEJ [ETX]	Same as left	EJECT
[STX] OPL [ETX]	Same as left	PLAY
[STX] ORW [ETX]	Same as left	REWIND
[STX] OFF [ETX]	Same as left	FAST FORWARD
[STX] OPA [ETX]	Same as left	PAUSE/STILL
[STX] ORC [ETX]	Same as left	RECORD
[STX] OAF [ETX]	Same as left	ADVANCE/FORWARD
[STX] OAR [ETX]	Same as left	ADVANCE/REVERSE
[STX] OPR [ETX]	Same as left	REVERSE PLAY
[STX] OSL [ETX]	Same as left	SEARCH PAUSE
[STX] OSD [ETX]	Same as left	SEARCH SPEED DOWN
[STX] OSU [ETX]	Same as left	SEARCH SPEED UP
[STX] EIN [ETX]	Same as left	INSERT
[STX] EAD [ETX]	Same as left	AUDIO DUB
[STX] EIT : □□□□□□□□ [ETX]	[STX] EIT [ETX]	INSERT VIDEO TO FRAME Sign Hour : Minutes : Seconds : Frames
[STX] EAT : □□□□□□□□ [ETX]	[STX] EAT [ETX]	INSERT AUDIO TO FRAME Sign Hour : Minutes : Seconds : Frames
[STX] EVT : □□□□□□□□ [ETX]	[STX] EVT [ETX]	INSERT AUDIO & VIDEO TO FRAME Sign Hour : Minutes : Seconds : Frames
[STX] OSF : □ [ETX]	[STX] OSF [ETX]	DIRECT SEARCH (+ direction)
[STX] OSR : □ [ETX]	[STX] OSR [ETX]	DIRECT SEARCH (– direction)
[STX] POW [ETX]	Same as left	POWER ON/OFF
[STX] PON [ETX]	Same as left	POWER ON
[STX] POF [ETX]	Same as left	POWER OFF

• SEARCH COMMAND

Send command	Data received from VTR	Description of operation
[STX] SMC [ETX]	Same as left	SEARCH MODE COASE
[STX] SMF [ETX]	Same as left	SEARCH MODE FINE
[STX] SCP : □□□□□□□□ [ETX]	[STX] SCP [ETX]	COUNTER SEARCH PLAY Sign Hour : Minutes : Seconds : Frames
[STX] SCS : □□□□□□□□ [ETX]	[STX] SCS [ETX]	COUNTER SEARCH PAUSE Sign Hour : Minutes : Seconds : Frames
[STX] SPT : □□□□□□□□ [ETX]	[STX] SPT [ETX]	PLAY TO FRAME Sign Hour : Minutes : Seconds : Frames

• MODE AND DATA SENSE COMMAND

Send command	Data received from VTR	Description of operation
[STX] QOP [ETX]	[STX] □□□ [ETX]	STATUS SENSE
[STX] QOS [ETX]	[STX] OPS □□□□□□ □□□□ [ETX]	DECK STATUS SENSE
[STX] QCD [ETX]	[STX] CD □□□□□□□□ □□□ [ETX]	COUNTER SENSE

• Other commands

Send command	Data received from VTR	Description of operation
[STX] CRT [ETX]	Same as left	COUNTER RESET
[STX] CCL [ETX]	Same as left	COUNTER CALIBRATE
[STX] RGK [ETX]	Same as left	ON LINE CHECK
[STX] QID [ETX]	[STX] AG5710P [ETX]	DECK ID SENSE

Troubleshooting

If you think that something has gone wrong with your product, check out the following points before calling in the servicing engineer.

Trouble in VTR

Symptom	Cause	Remedy
■ VTR display fails to appear.	• Power cord is not connected.	• Connect power cord.
■ VTR display lights but fails to work.	• Timer recording is ON. (Timer recording display "⏲" is lighted.)	• Press **TIMER REC** button to release timer recording mode.
	• Mode lock is ON. (Mode lock display "L" is lighted.)	• Press **MODE LOCK** button to release mode lock.
	• Safety device has been activated.	• Press **POWER** button to turn off power, and unplug power cord from outlet. Wait about a minute. Then re-connect power cord to outlet, and press **POWER** button to turn power back on.
	• "☃" display is flashing since condensation has formed.	• Wait until "☃" display stops flashing. (See page 41)
■ VTR stops operating and after several seconds it is turned off.	• Tape has jammed in VTR.	• Do not attempt to remove tape since you may damage it in the process. Consult with your dealer.

Trouble with playback

Symptom	Cause	Remedy
■ Picture is affected by noise. Alternatively, picture appears in black and white. Alternatively, horizontal bars run vertically.	• Automatic digital tracking function has failed to work.	• Proceed with manual tracking adjustment to minimize noise bar distortion which cannot be removed by automatic digital tracking. (See page 10)
	• Clogged video heads. Tape is damaged or worn.	• Refer to section on video head cleaning on page 41, and consult with your dealer.
■ VTR rewinds tape during playback.	• Tape is damaged and device for detecting tape end has been activated during playback.	• Replace cassette tape.

Troubleshooting

Trouble with recording

Symptom	Cause	Remedy
■ Alarm tone is heard, and "📼" flashes.	• Cassette's accidental erasure prevention tab has been broken out.	• Insert another cassette with its tab intact or cover hole on existing cassette with adhesive tape if recording is no longer required.
■ OTR or timer recording fails to operate.	• "12:00" clock display is flashing.	• Set the clock to the present time. (See page 6)
	• Clock or date has not been set properly.	• Set to the present date and time. (See page 6)
	• Recording start or end time has been set incorrectly.	• Program the timer recording. To practice making the settings correctly, program a short recording to begin in a few minutes' time and see if the recording was performed as intended. (See pages 20 and 21)
	• Timer-programmed recording has not been set.	• Press the **TIMER REC** button after setting the timer-programmed recording.
■ Recording cannot be performed using S-VIDEO IN or VIDEO IN and AUDIO IN.	• **INPUT SELECT** switch has not been set correctly.	• Set the **INPUT SELECT** switch to S-VIDEO or LINE.
	• External AV connections have not been made correctly.	• Make the connections properly. (See pages 22 and 25)

Maintenance and cleaning

- This unit contains some precision-made mechanisms in order to achieve a high performance. Remember to maintain and clean this machine to ensure that it will render years of trouble-free use. Do not attempt to oil the machine, replace any of its parts or adjust or service its electrical components since all these actions require expertise and sophisticated equipment. Consult with your dealer and have professionals do what is required.
- Failure to have the dust and dirt which have accumulated inside the unit removed, the lubricating oil replenished, the worn parts (such as the heads) replaced and other maintenance and inspection operations conducted will make it impossible to display quality pictures or perform recordings as designed, and will reduce the unit's service life. Have your unit maintained and inspected at an early date.

Cleaning the video heads

This unit comes with an auto head cleaning function which automatically reduces the build-up of dirt on the heads. However, to improve its reliability, regular cleaning of the video heads is recommended. Use the cleaning fluid designated by the manufacturer.

Condensation

Condensation may form on the cylinder if the unit is moved from a cold location to a warm room or operated in a very humid atmosphere. The principle involved is the same as when droplets of moisture form on the window panes of a warm room.
When condensation forms inside the unit, "☝" flashes on the display, and the VTR will not operate no matter which function button is pressed.

Take note of the following points.
- Before inserting a cassette tape, check that "☝" is not flashing on the display.
- When possible, avoid using the unit where condensation may form.
- Eject the cassette tape before the unit is to be moved.
- When the "☝" display flashes, wait (about 2 to 3 hours) with the power on until "☝" is cleared from the display.
- When the "☝" flashing display is cleared, load and run a cassette tape, and check that no trouble occurs.

The formation of condensation is normally a gradual process: this means that "☝" may not start flashing during the first 10 to 15 minutes after condensation begins to form.
When the room temperature or humidity has changed suddenly, wait about 20 minutes before operating the unit.

SECTION 2

SERVICE INFORMATION

CONTENTS

2-1. SELF TEST INDICATION DISPLAY 2-1
2-2. SERVICE MODE 2-2
2-3. REPLACEMENT OF THE UPPER CYLINDER UNIT 2-4
2-4. TIMING CHART OF MODE SW 2-5

2-1. SELF TEST INDICATION DISPLAY

AG-5710 has a self-diagnosis and display function.

If the VCR detects trouble during installation or use, one of the following fault indication codes will automatically appear on the VCR display.

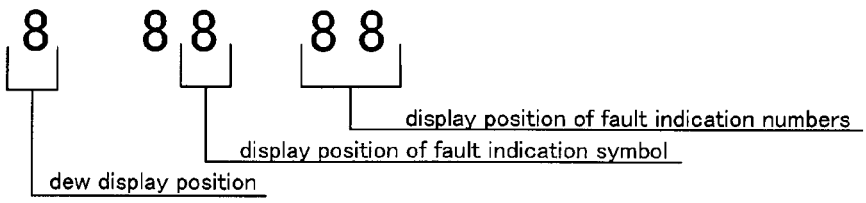
Note : ① The indication "U" or "3" is displayed on the FIP as power remains ON.

② The indication "H" or "F" is displayed on the FIP as power is turned off automatically. When power is turned on again, the fault indication will disappear and the unit will return to normal display mode.

③ The fault indication number is still stored in the Timer microprocessor even if the power plug is disconnected from the outlet. The stored fault indication number can be re-displayed on the FIP by placing the unit in the Service Mode No.2.

To erase the stored fault indication code data, press the FF, REW and EJECT buttons simultaneously for more than 5 seconds.

〈Counter Display〉


8 8 8 8 8
display position of fault indication numbers
display position of fault indication symbol
dew display position

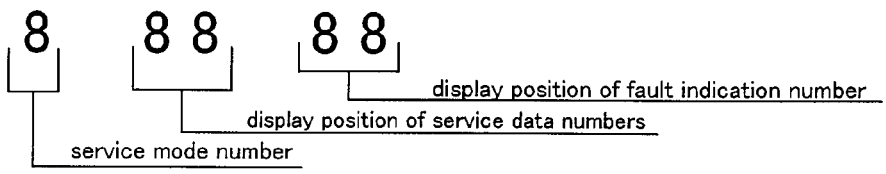
dew display	fault indication	CAUSE	REMEDY/CHECK
d	U 10	Condensation (DEW) is detected.	Wait until the "d" display goes off.
---	3 11	Head clogging occurs during playback.	Head Cleaning
---	H 01	The cylinder motor does not rotate after the cylinder lock is detected and the tape is unloaded once.	Check the cylinder motor drive circuit.
---	H 02	Capstan motor does not rotate when tape winding is performed before the tape is re-loaded after unloading except in EJECT mode (ex. reel lock during playback).	Check the capstan motor drive circuit.
---	F 03	Mechanism locks during mode transition.	1. Check the mode SW. 2. Check the loading motor drive circuit. 3. Check the mechanism phase alignment.
---	F 04	Tape unloading cannot be performed in EJECT mode.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment.
---	F 05	Tape is not wound up during tape unloading in EJECT mode.	1. Check the capstan motor drive circuit. 2. Check the supply/take-up reel pulse.
---	F 06	EJECT cannot be performed because the cassette is caught.	1. Check the loading motor drive circuit. 2. Check the mechanism phase alignment for cassette holder unit.
---	F 09	Serial communication error between IC6001 and IC6503.	Check the circuit between IC6001 and IC6503.

2-2. SERVICE MODE

2-2-1. Turning on Service Information Display

The Service Information Display is turned on by pressing the FF, REW and EJECT buttons simultaneously.
Every time the FF, REW and EJECT buttons are pressed simultaneously, the Service Mode Number proceeds from 0 to 7 in sequence in the Service Information Display Mode. After reaching to 7, the display returns to Counter Display next.

〈Counter Display〉



2-2-2. Service Data (☐ shows that no display.)

Item	Service Mode Numbers	Service Data Numbers	Fault Indication Numbers	Indication	Remarks	Usage
Process of fault	0	---	☐0	Normal (No problem)	・If a new fault occurs next, the recent one is displayed and stored. ・Fault Indication Number is still displayed in other service modes (1-7) also.	This mode can be used to check the process of fault.
			☐1	The cylinder motor does not rotate after the cylinder lock is detected and the tape is unloaded once.		
			☐2	Capstan motor does not rotate when tape winding is performed before the tape is re-loaded after unloading except in EJECT mode (ex. reel lock during playback).		
			☐3	Mechanism locks during mode transition.		
			☐4	Tape unloading cannot be performed in EJECT mode.		
			☐5	Tape is not wound up during tape unloading in EJECT mode.		
			☐6	EJECT cannot be performed because the cassette is caught.		
			☐9	Serial communication error between IC6001 and IC6503.		
Data of Tape Beginning and Tape End	1	00	---	No light is detected at either sensor.	The sensor LED and the supply and take-up sensor can be checked by blocking the light from the sensor LED to either or both sensors without a cassette tape.	This mode can be used to check the condition of detecting the tape beginning and the tape end.
		01		Tape Beginning. Light is detected at Take-up Photo Sensor.		
		02		Tape End. Light is detected at Supply Photo Sensor.		
		03		Light is detected at both sensors.		

Item	Service Mode Numbers	Service Data Numbers	Fault Indication Numbers	Indication	Remarks	Usage
Mechanism Position Number	2	00	---	Eject	• Detection of tape end or beginning isn't activated in this mode to enable PLAY action without a cassette tape. • When operating the unit without a cassette tape, remove the cassette holder. (Because the cassette holder doesn't go down without a cassette tape.)	This mode can be used to check mechanism motion. • Check of mechanism phase alignment • Search for cause of abnormal mechanism action
		01		Cassette down		
		02		REV		
		03		MID (loading has been completed and tape has been pulled out completely)		
		04		PLAY		
		05		STOP		
		06		FF/REW		
		07		Intermediate Position		
Mechanism Process Number	3	□*	---	Cassette in → STOP	These indications are displayed only during mode transition of mechanism and return to "00" display after mode transition.	This mode can be used to check mode transition of mechanism.
		2*		STOP → PLAY		
		4*		PLAY → CUE/REV		
		2*		STOP3 → FF/REW		
		3*		STOP3 → PLAY direction		
		1*		Unloading direction		
Key Code	4	Refer to ⟦2-2-3. Service Data Display for Mode Button⟧.			These are displayed only when the operating buttons are pressed.	This mode can be used to check if IC6001 has received the operation commands from the mode buttons of the front panel or the remote controller.
Capstan Motor	5	8*	---	Capstan Motor ON	8, 9, U, R, –, n, L and no display indicate that IC6001 has received the command "Capstan motor ON".	This mode can be used to check if IC6001 has received the Capstan motor drive command correctly.
		*7		Forward Rotation of Capstan Motor	1, 2, 3, 4, 5, 6, 7 indicate that IC6001 has received the command "forward rotation of Capstan motor".	
		*8		Reverse Rotation of Capstan Motor	8, 9, U, R, –, n, L and no display indicate that IC6001 has received the command "reverse rotation of Capstan motor".	
Cylinder Motor	6	1*	---	Cylinder Motor ON	1, 3, 5, 7, 9, R, n and no display indicate that IC6001 has received the command "Cylinder motor ON".	This mode can be used to check if IC6001 has received the Cylinder motor drive command correctly.
Manual Loading	7	Mechanism Position Numbers	---	• The unit goes into manual mode. Every time the PLAY (STOP) button is pressed, loading (unloading) action proceeds by 1 step. • This mode is reset by pressing the POWER button.		This mode can be used to check loading/unloading operation

2-2-3. Service Data Display for Mode Button (□ shows that no display.)

When the service mode number is set to "4", the service data number is displayed in the display position of "Service Data Numbers" on the FIP according to the "Mode Button" as shown below. (It is displayed only when the operating button is pressed.)

Service Data No.	Mode Button	Service Data No.	Mode Button
00	STOP	3n	POWER
01	EJECT	49	INDEX |◀◀
02	REW	4U	INDEX ▶▶|
03	FF	80	JOG ON
06	PAUSE/STILL	R3	INSERT
08	REC	R4	TIMER REC
09	AUDIO DUB	-0	MODE LOCK
0U	PLAY	□5	ZERO STOP

2-3. Replacement of the Upper Cylinder Unit

The Upper Cylinder Unit of AG-5710 is solder-free type. When replacing the Upper Cylinder Unit, it can be removed only by pulling out after removing the Earth Plate U.

(1) Unscrew the screw fixing the Earth Plate U and remove the Earth Plate U.

※ Don't remove the 3 screws on the Upper Cylinder and don't unsolder the soldered portion on the Upper Cylinder Unit.

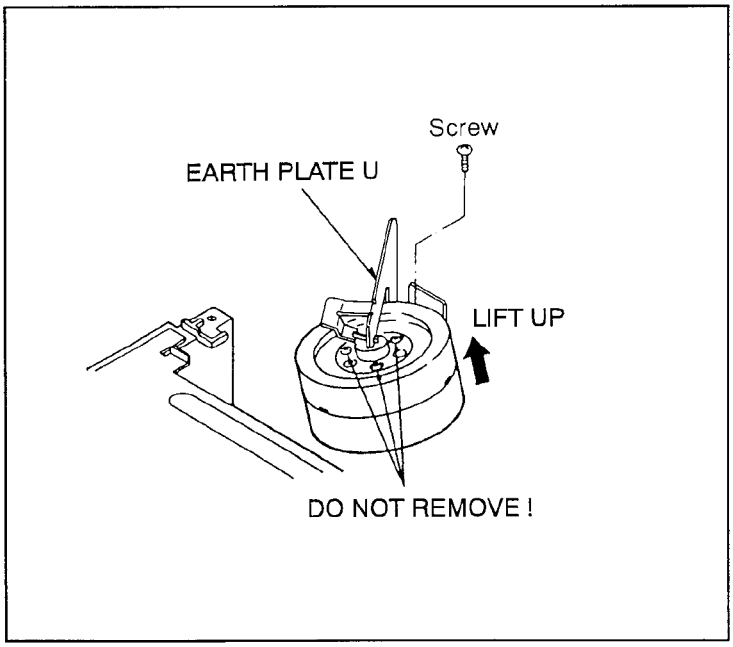


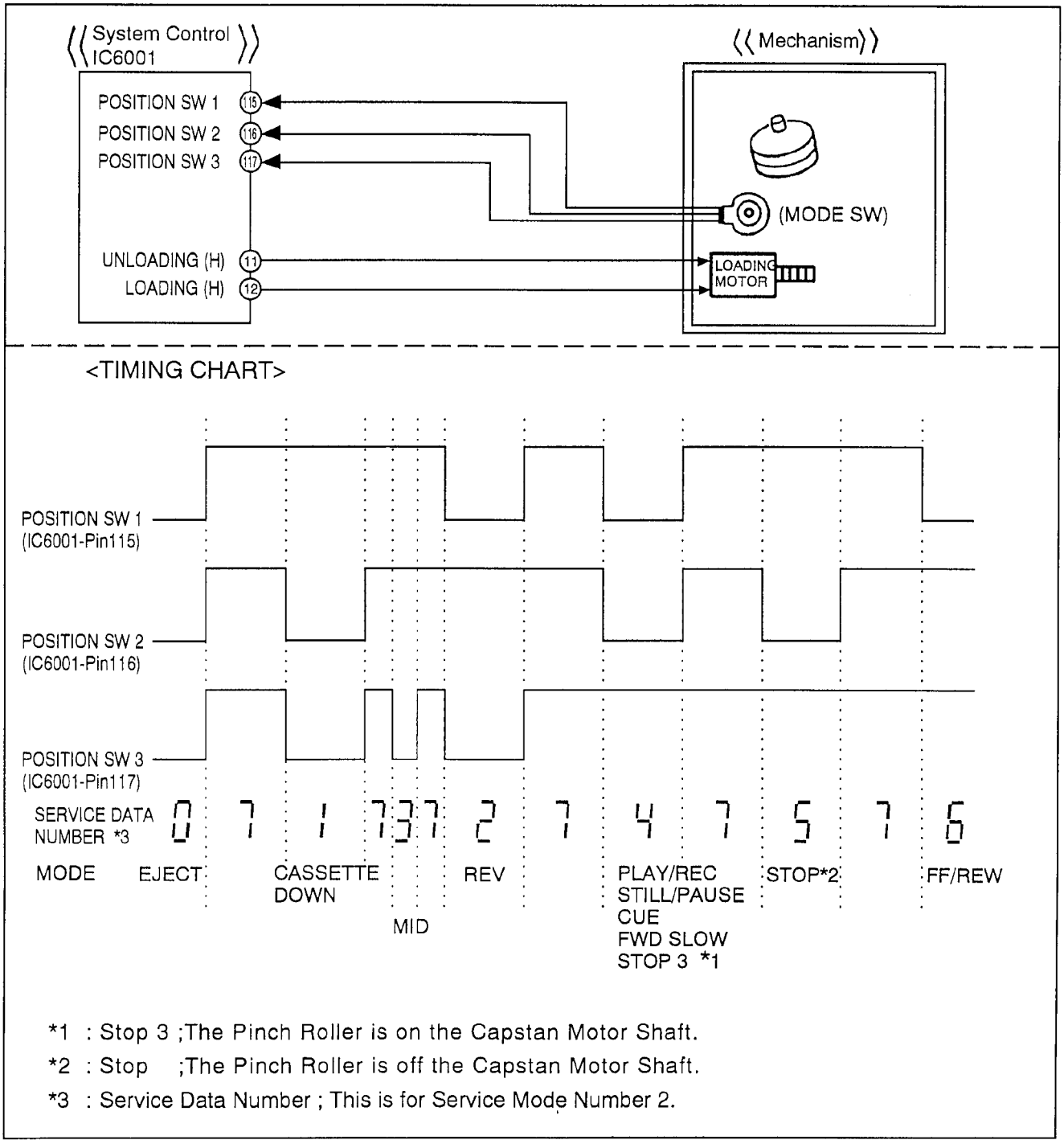
Fig. S-1

(2) Lift up the Upper Cylinder Unit and pull out it carefully.

(3) When reinstalling, reverse the removal procedures.

2-4. TIMING CHART OF MODE SW

System control IC6001 senses the mechanism position through the Mode SW.



*1 : Stop 3 ;The Pinch Roller is on the Capstan Motor Shaft.

*2 : Stop ;The Pinch Roller is off the Capstan Motor Shaft.

*3 : Service Data Number ; This is for Service Mode Number 2.

Fig. S-2 Timing Chart of Mode SW

SECTION 3

DISASSEMBLY PROCEDURES

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3-2. DISASSEMBLY METHOD 3-2
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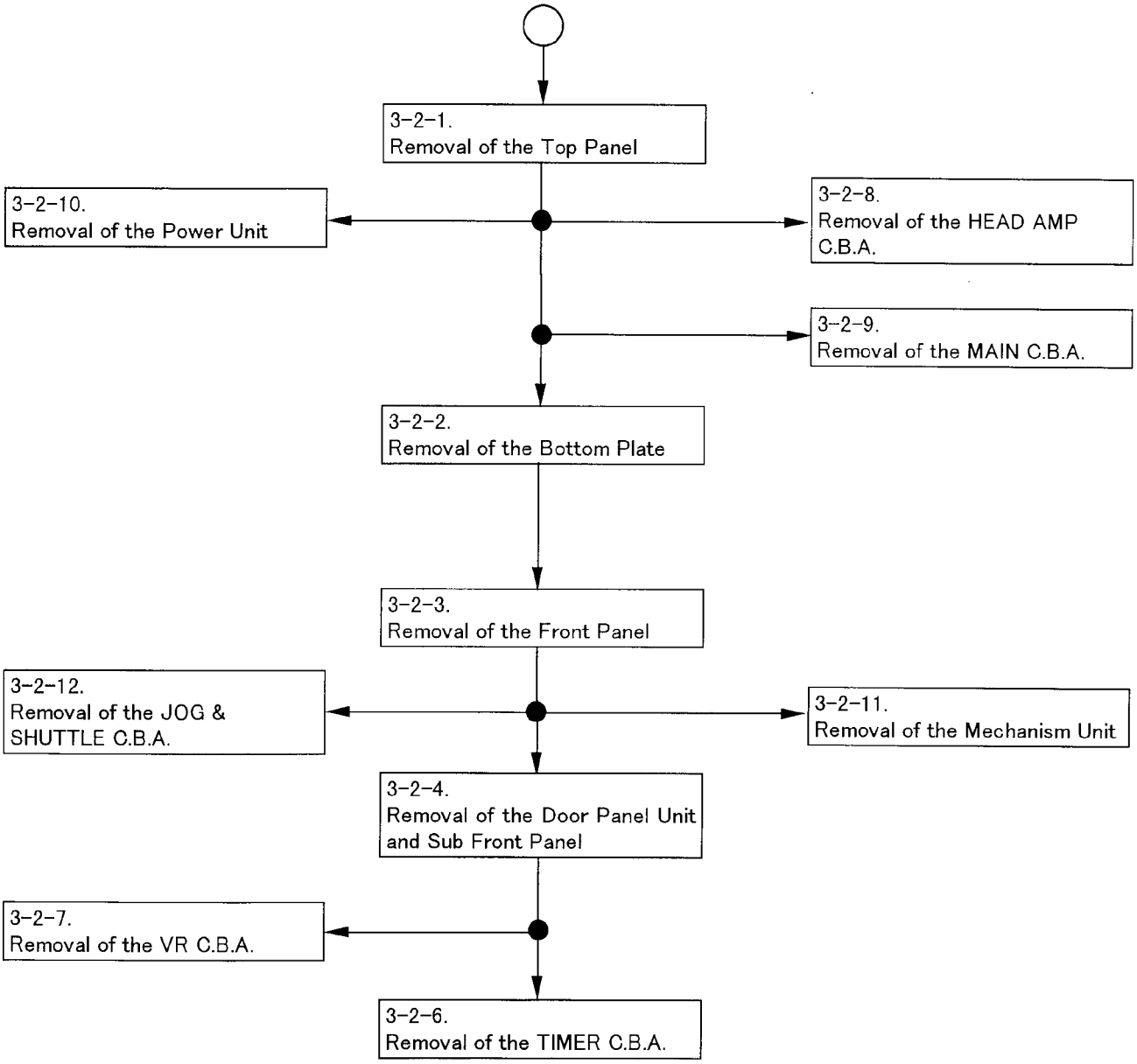
3-1. DISASSEMBLY FLOWCHART

This flowchart indicates disassembly steps of the cabinet parts and circuit boards in order to find the necessary items for servicing. When reassembling, perform the steps in the reverse order.



3-2. DISASSEMBLY METHOD

3-2-1. Removal of the Top Panel

1. Unscrew the 4 screws (A) on the Top Panel.
2. Lift up the rear portion of the Top Panel, then slide it off the back of the unit.

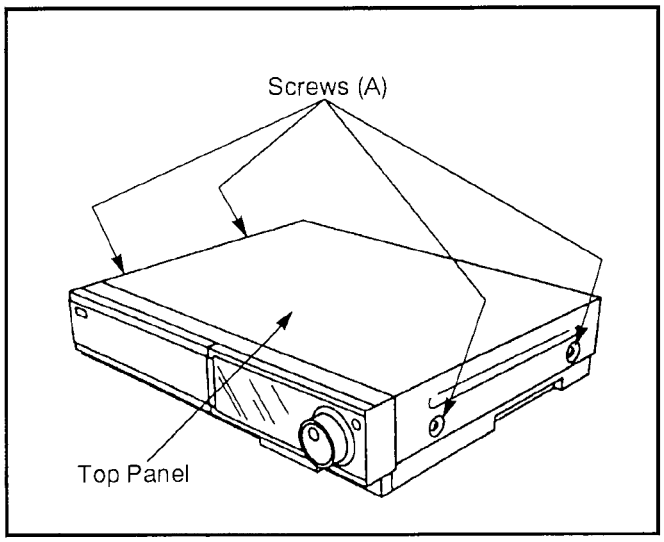


Fig. D-1

3-2-2. Removal of the Bottom Plate

1. Unscrew the 9 screws (B) on the Bottom Plate.
2. Lift the Bottom Plate.

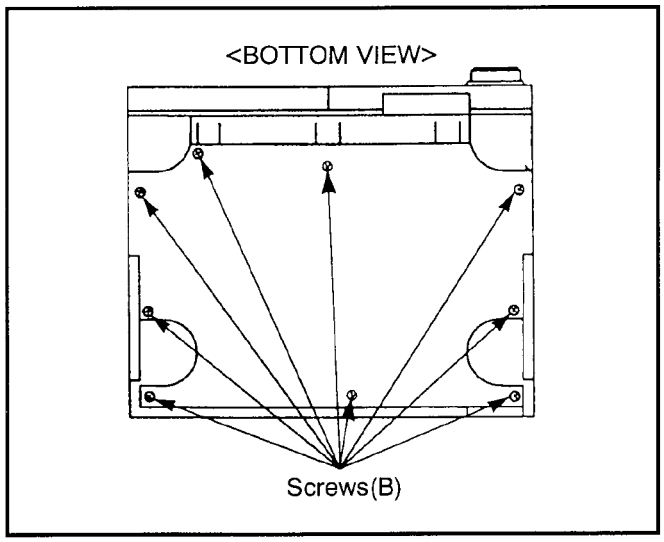


Fig. D-2

3-2-3. Removal of the Front Panel

1. Unscrew the screw (C) on the top of the Front Panel.
2. Press the PUSH-OPEN button to open the Door Panel.
3. Unlock the 7 locking tabs (D) of the Front Panel. (Refer to the Fig. D-3-1 and Fig. D-3-2.)
4. Disconnect the P6701 connector, then pull out the Front Panel carefully.

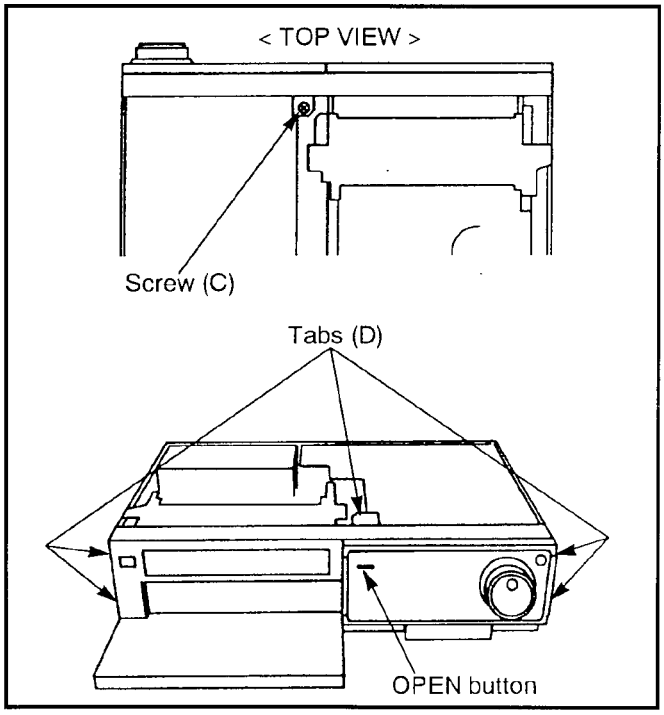


Fig. D-3-1

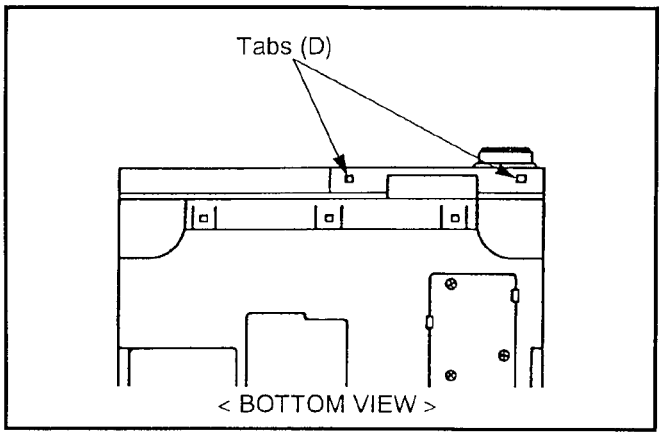


Fig. D-3-2

3-2-4. Removal of the Door Panel Unit and Sub Front Panel

1. Unscrew the 3 screws (E) on the TIMER C.B.A. and VR C.B.A..
2. Unscrew the 3 locking tabs (F).
3. Disconnect the 2 flexible cables from P6501 and P6853.

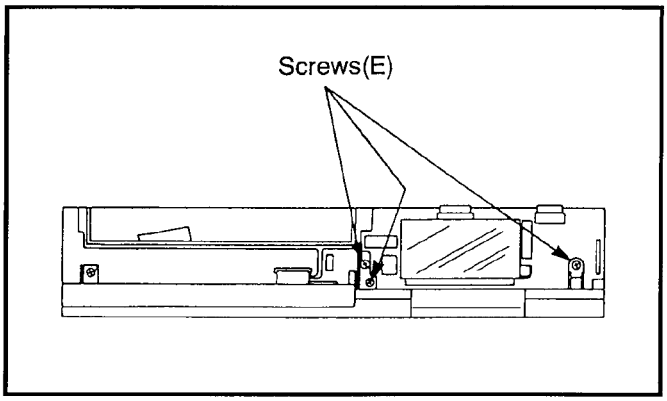


Fig. D-4-1

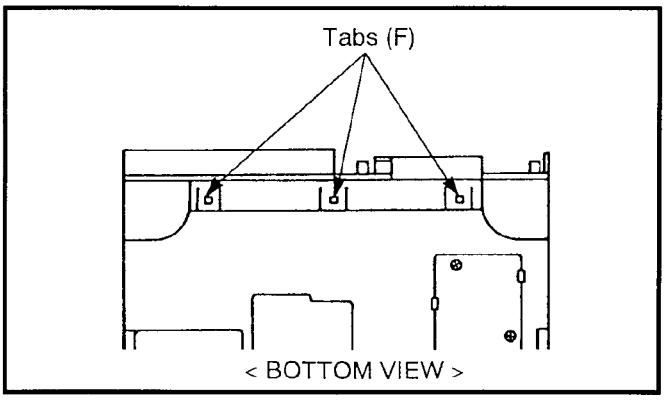


Fig. D-4-2

3-2-5. Removal of the Door Panel Switch Unit

1. Unscrew the 3 screws (G) on the Door Panel.
2. Remove the Door Panel from the Door Aluminum Unit.
3. Unlock the 10 locking tabs (H), then remove the Door Support Panel.
4. Carefully slide the SWITCH C.B.A. in the direction indicated by arrow.

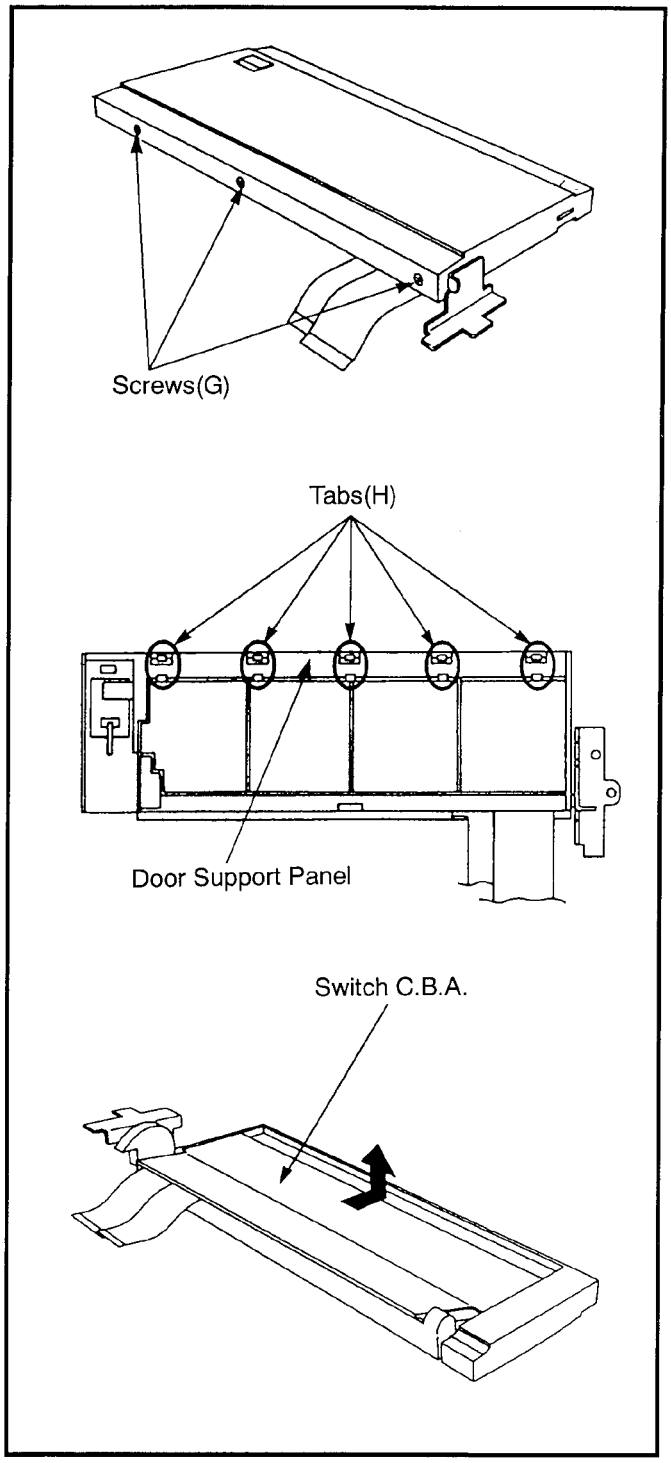


Fig. D-5

3-2-6. Removal of the TIMER C.B.A.

1. Unscrew the screw (I) on the TIMER C.B.A..
2. Unlock the locking tab (J) on the TIMER C.B.A..
3. Disconnect the 2 flexible cables (P6502 and P6503) and the connector (P6504).

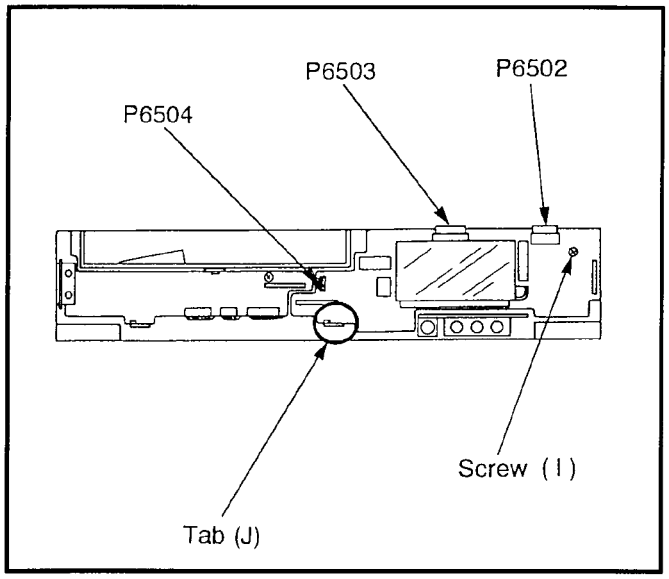


Fig. D-6

3-2-7. Removal of the VR C.B.A.

1. Unscrew the 2 screws (K) on the VR C.B.A..
2. Unscrew the screw (R) fixing the Earth Angle on the left side of the frame.
3. Unlock the 2 locking tabs (L) on the VR C.B.A..
4. Disconnect the 2 connectors (P6852 and P6870) on the VR C.B.A..
5. Disconnect the connector P6504 on the TIMER C.B.A..

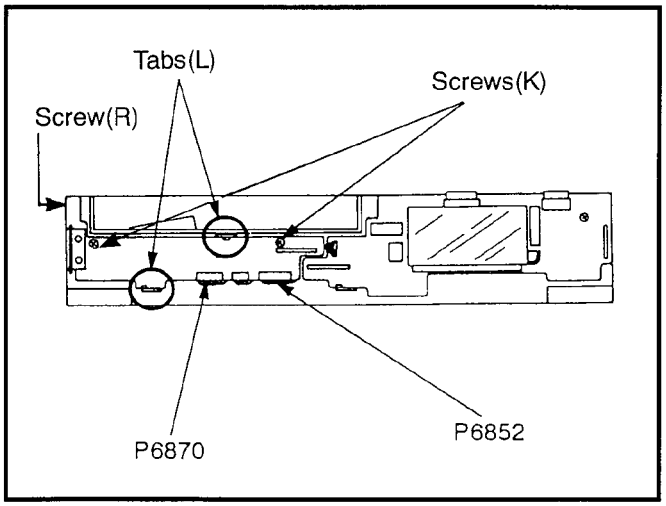


Fig. D-7

3-2-8. Removal of the HEAD AMP C.B.A.

1. Unscrew the 2 screws (M) on the HEAD AMP C.B.A..
2. Disconnect the 2 flexible cables (P551 and P501).
3. Carefully pull out the HEAD AMP C.B.A..

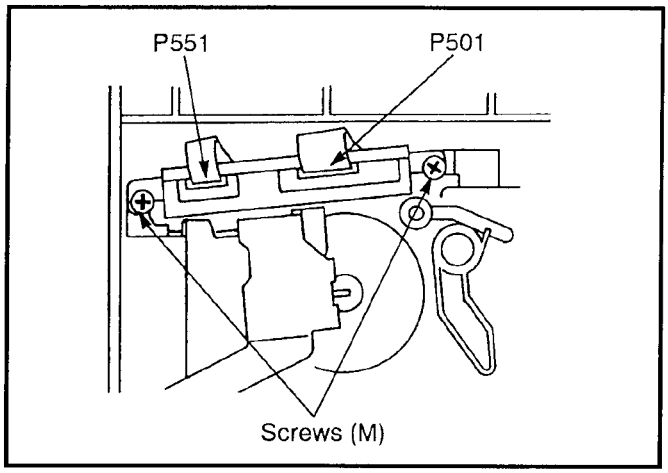


Fig. D-8

3-2-9. Removal of the MAIN C.B.A.

1. Unscrew the 3 screws (N) on the MAIN C.B.A..
2. Unscrew the 4 screws (O) on the rear side of the frame.
3. Unscrew the screw (S) fixing the Earth Cable from the MAIN C.B.A. on the POWER Unit. (Refer to the Fig. D-10-1)
4. Unlock the locking tab (P) on the MAIN C.B.A..
5. Lift up the MAIN C.B.A..
6. Disconnect the cables connected to the MAIN C.B.A..

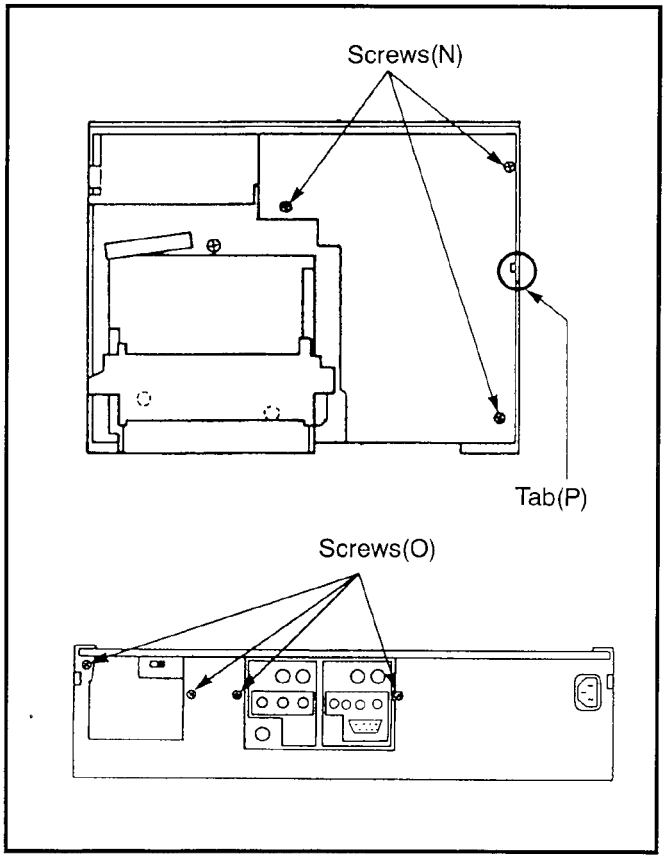


Fig. D-9

3-2-10. Removal of the Power Unit

1. Unscrew the 2 screws (Q) on the Power Unit.
2. Unscrew the screw (S) fixing the Earth Cable from the MAIN C.B.A..
3. Lift up the Power Unit and pull out the connector P1002.

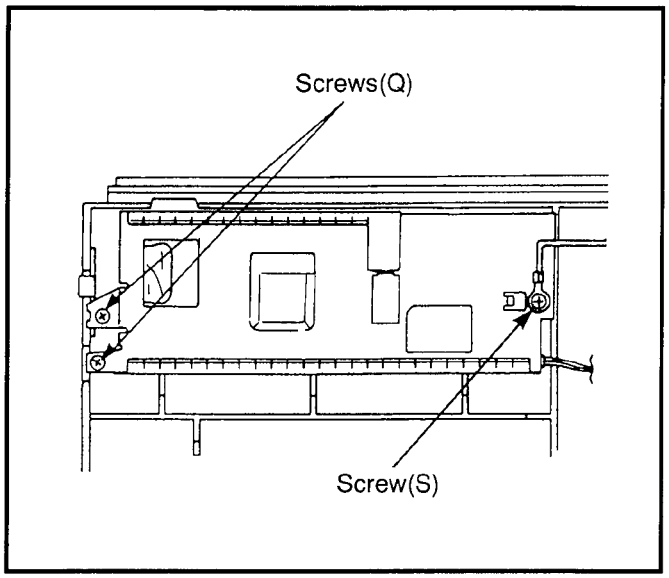


Fig. D-10-1

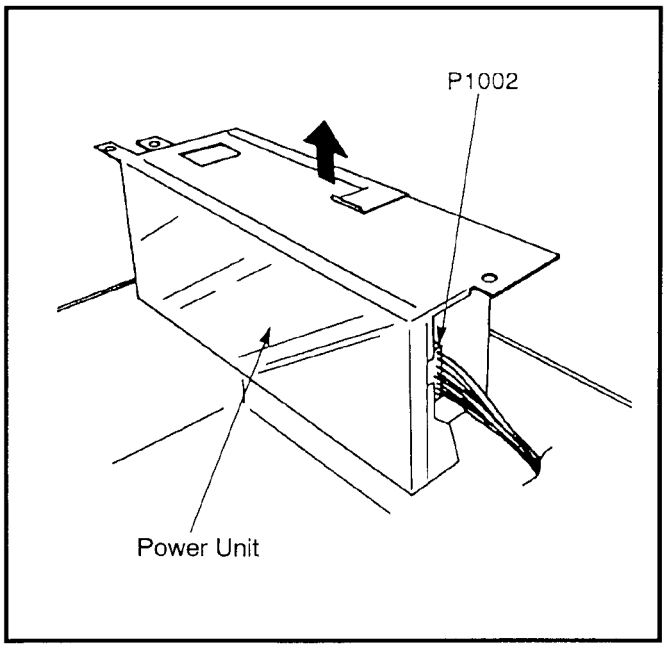


Fig. D-10-2

3-2-11. Removal of the Mechanism Unit

1. Unscrew the screw (V).
2. Unscrew the 2 screws (T). (The screws (T) don't appear in EJECT mode. Unscrew them while pushing the HOLDER PLATE slightly to the rear of the mechanism.)
3. Disconnect the cables connected to the mechanism.
4. Carefully pull out the Mechanism Unit from the frame.

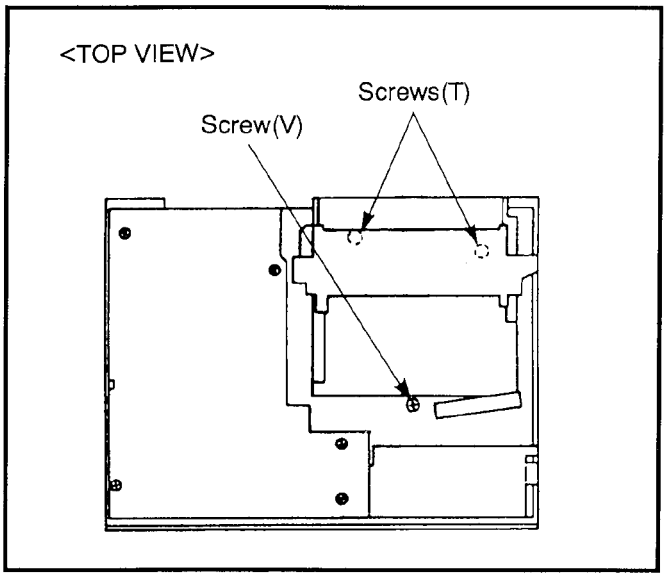


Fig. D-11

3-2-12. Removal of the JOG & SHUTTLE C.B.A.

1. Remove the JOG KNOB and SHUTTLE KNOB.
2. Unscrew the 3 screws (U) on the Front Panel.

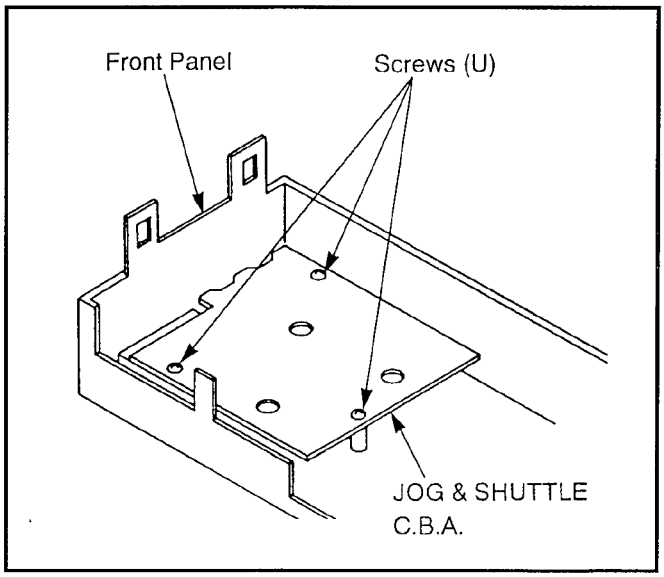


Fig. D-12

SECTION 4

MAINTENANCE

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4-1. MAINTENANCE CHART 4-1
4-2. ADJUSTMENT PROCEDURES AFTER REPLACEMENT 4-2
4-3. INFORMATION FOR REPLACEMENT AND ADJUSTMENT PROCEDURES 4-3

REGULAR MAINTENANCE

The purpose of periodic maintenance is to preserve the functioning of this machine throughout its useful life. The user or service dealer should perform these maintenance regularly to ensure that maximum utility is obtained from the machine. The VCR is a complicated place of equipment. It contains many belts, rollers, heads etc., which become worn, and deteriorate as time goes by, causing trouble. Dust and dirt will also impede the proper functioning of the machine. In light of this, it is very important that overall maintenance be done according to the maintenance chart to maintain the functions of the VCR, and to avoid accidental problems. This maintenance should also be performed after any repairs are done on the equipment.

The VCR used for business applications requires particular attention for several reasons. The installation conditions and applications are not always the best. Long use times, or poor environmental conditions may adversely affect the lifespan and performance of the machine. Regular maintenance assures that the purchaser obtains the maximum value for his expenditure. Accordingly, the necessity of regular maintenance should be fully explained at the time of sale, as well as during after-sale repairs.

4-1. MAINTENANCE CHART

The following periodic maintenance is required to prolong the life of the machine.

Ref. No. in P/L	Parts Name	Hour									
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000
-----	Tape Transporters	●	●	●	●	●	●	●	●	●	●
71(1)	Upper Cylinder U	●	◎	●	◎	●	◎	●		●	◎
70(1)	Cylinder U	●	●	●	●	●	●	●	◎	●	●
20(1)	A/C Head (1) U	●	●	●	●	●	●	●	◎	●	●
12(1)	FE Head	●	●	●	●	●	●	●	◎	●	●
60(1)	Supply Reel Table U	●	●	●	●△	●	●	●	●△	●	●
61(1)	Take-up Reel Table U	●	●	●	●△	●	●	●	●△	●	●
106(2)	Capstan Rotor U	●	●△	●	●△	●	●△	●	◎△	●	●△
15(1)	Impedance Roller U	●	●	●	●	●	●	●	◎	●	●
105(2)	Capstan Housing U								◎		
49(1)	Pinch Arm U				◎				◎		
63(1)	Supply Brake Arm U				◎				◎		
64(1)	Take-up Brake Arm U				◎				◎		
52(1)	Tension Band U				◎				◎		
113(2)	Timing Belt				◎				◎		
121(2)	Loading Motor (1) U				◎				◎		
9(1)	Cleaner Arm U				◎				◎		
128(2)	SS Brake Base U				◎				◎		
127(2)	Mode Switch								◎		
62(1)	Earth Plate U								◎		
108(2)	Main Cam Gear				×				×		
40(1)	Inclined Base (S) U				■				■		◎
42(1)	Inclined Base (T) U				■				■		◎

Symbol	Maintenance	Requirement	Remark
●	Cleaning	Ethyl-Alcohol or Cleaning Liquid (Purchase locally)	Wipe dirt from the parts using soft cloth impregnated with Ethyl-Alcohol. Note : When cleaning rubber parts, avoid using excessive alcohol since it may accelerate deterioration of these parts. After cleaning with alcohol, wipe the alcohol quickly and thoroughly.
◎	Replacement	----------	----------
△	Lubrication	Hydro HV100 Oil (VFK0131)	Supply one or two drops of oil.
■	Greasing	Morlytone Grease (MOR265)	Wipe the old grease and apply new grease.
×	Greasing	SCR Grease (VFK0680)	Wipe the old grease and apply new grease.

4-2. ADJUSTMENT PROCEDURES AFTER REPLACEMENT

The adjustment procedures to be performed after replacement are shown below.

1000 Hours

Replacement Parts	Adjustment Items	Section	Remark
Upper Cylinder U	Fine Adjustment of P2 and P3 Posts	Mechanical	K-MECHANISM 3-2
	PG SHIFTER ADJ.	Electrical	
	Horizontal Position Adjustment of A/C Head	Mechanical	K-MECHANISM 3-6
	REV SLOW TRACKING ADJ.	Electrical	
	S-VHS REC CURRENT ADJ.	Electrical	
	VHS REC CURRENT ADJ.	Electrical	
	S-VHS FREQUENCY RESPONSE ADJ.	Electrical	

2000 Hours

Replacement Parts	Adjustment Items	Section	Remark
1000 Hours Maintenance + the items shown below			
Pinch Arm U	Pressing Force Confirmation of the Pressure Roller	Mechanical	K-MECHANISM 3-12
Tension Band U	Adjustment of Tension Post Position	Mechanical	K-MECHANISM 3-7
	Adjustment of Back Tension	Mechanical	K-MECHANISM 3-8

4000 Hours

Replacement Parts	Adjustment Items	Section	Remark
2000 Hours Maintenance + the items shown below			
A/C Head (1) U	Coarse Adjustment of A/C Head Height (1)	Mechanical	K-MECHANISM 3-3
	Coarse Adjustment of A/C Head Height (2)	Mechanical	K-MECHANISM 3-4
	Fine Adjustment of A/C Head Height	Mechanical	K-MECHANISM 3-5
	Fine Adjustment of P2 and P3 Posts	Mechanical	K-MECHANISM 3-2
	Horizontal Position Adjustment of A/C Head	Mechanical	K-MECHANISM 3-6
	NORMAL AUDIO BIAS CURRENT ADJ.	Electrical	
	NORMAL AUDIO PB LEVEL ADJ.	Electrical	
Capstan Housing U	Adjustment of Capstan Housing & Stator	Mechanical	K-MECHANISM 3-9
Capstan Rotor U	Adjustment of Thrust Gap	Mechanical	K-MECHANISM 3-10
	Adjustment of FG GAP	Mechanical	K-MECHANISM 3-11
Mode Switch	Assembly of Mode Switch	Mechanical	K-MECHANISM 4-5

※ Concerning mechanical adjustment procedures, please refer to the service manual for K-Mechanism (Order No.VSD9401M242) and "4-3. INFORMATION FOR REPLACEMENT AND ADJUSTMENT PROCEDURES" of this service manual.

4-3. INFORMATION FOR REPLACEMENT AND ADJUSTMENT PROCEDURES

Concerning replacement and adjustment procedures of mechanical parts, please refer to the service manual for K-Mechanism (Order No.VSD9401M242).

This section contains the supplementary information for replacement and mechanical adjustment procedures of K-Mechanism.

2-1. Replacement of the Upper Cylinder Unit

The Upper Cylinder Unit of AG-5710 is solder-free type. When replacing the Upper Cylinder Unit, it can be removed only by pulling out after removing the Earth Plate U.

(1) Unscrew the screw fixing the Earth Plate U and remove the Earth Plate U.
(2) Lift up the Upper Cylinder Unit and pull out it carefully.
(3) When reinstalling, reverse the removal procedures.

3-2. Fine Adjustment of P2 and P3 Posts

- Test Point (Video RF Envelope) : TP3001
- Test Point (Video Head SW) : TP2001

3-6. Horizontal Position Adjustment of A/C Head

- Test Point (Video RF Envelope) : TP3001
- Test Point (Audio Output) : AUDIO OUT Terminal
- Test Point (Video Head SW) : TP2001

3-8. Adjustment of Back Tension

- Specification of Back Tension : 22.5 - 27.5gf

3-11. Adjustment of FG GAP

- Specification of FG GAP : 0.15±0.04mm

3-12. Pressing Force Confirmation of the Pressure Roller

- Specification of Pressing Force : 1140±250gf

SECTION 5

Electrical Adjustment Procedures

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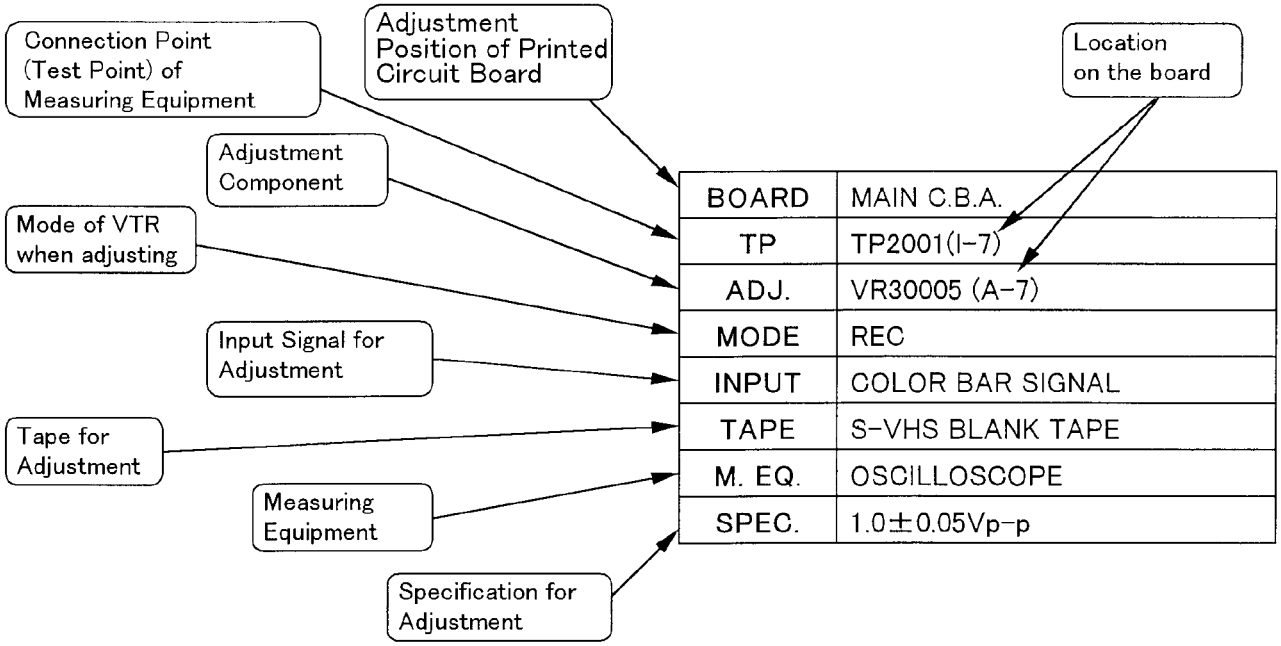
5-1. TEST & SERVICE EQUIPMENT

To perform electrical adjustment, the following equipments are required.

No	EQUIPMENT	CAPACITY
1	V.T.V.M. (Vacuum Tube Volt Meter) or D.V.M. (Digital Volt Meter)	0.001 to 50V
2	Dual-Trace Oscilloscope	0.005 to 50V/div, DC to 35MHz
3	Color Bar Signal Generator	
4	Video Sweep Generator	
5	Sinewave Signal Generator (RC Oscillator)	
6	Monitor TV	
7	VHS Alignment Tape (VFM8080HQFP)	

5-1-A. HOW TO READ THE ADJUSTMENT PROCEDURES



5-2. SERVO SECTION

5-2-1. PG SHIFTER ADJ.

BOARD	MAIN C.B.A.
TP	TP2001(I-7), VIDEO OUT TERMINAL
ADJ.	VR2001(D-3)
MODE	PLAY
INPUT	-----
TAPE	2nd portion of VFM8080HQFP
M. EQ	OSCILLOSCOPE
SPEC.	8.5±1.0H

1. Connect the oscilloscope to the VIDEO OUT TERMINAL for CH1 and TP2001(H.SW) for CH2.
2. Playback the above tape.
3. Place the unit in Tracking Fix position by pressing the "+" and "−" buttons simultaneously.
4. Adjust VR2001 so that T=8.5±1.0H as shown in Fig. E-1.

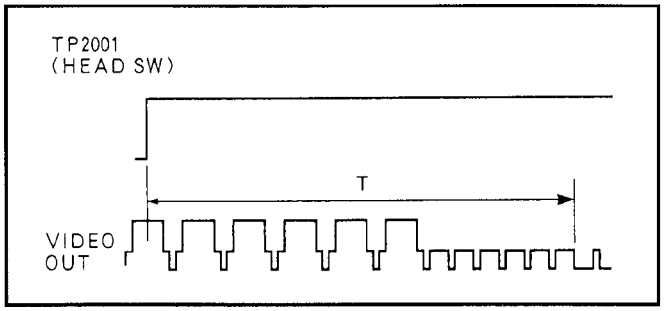


Fig. E-1

5-2-2. REV SLOW TRACKING ADJ.

BOARD	MAIN C.B.A.
TP	VIDEO OUT TERMINAL
ADJ.	2H : VR2019(B-5), 6H : VR2018(B-5)
MODE	REC ⇒ PLAY
INPUT	COLOR BAR
TAPE	VHS BLANK TAPE
M. EQ	MONITOR TV
SPEC.	SEE BELOW

1. Place the unit in STILL mode on the self-recorded (SP mode) portion.
2. Adjust VR2019 so that no noise bar appears on the top and bottom portion of the Monitor TV.
3. Place the unit in REV SLOW mode on the self-recorded (EP mode) portion.
4. Adjust VR2018 so that noise bar is minimized.

5-3. VIDEO SECTION

Note :

1. Supply the input signal through the VIDEO IN TERMINAL unless specified.
2. Place the unit in SP mode unless specified.
3. Set the switches and controls as follows.
   DETAIL/NOR/EDIT Switch → NOR
   PICTURE Control → CENTER position
   COLOR BW Switch → COLOR

5-3-1. EE Y LEVEL ADJ.

BOARD	RF AMP C.B.A.
TP	VIDEO OUT TERMINAL(75Ω Termination)
ADJ.	VR3601(F-1)
MODE	STOP
INPUT	COLOR BAR
TAPE	-----
M. EQ	OSCILLOSCOPE
SPEC.	1.0±0.05Vp-p

Note : Heating up must be done more than 10 minutes before performing this adjustment.

1. Adjust VR3601 so that the Y level (from SYNC TIP to 100% White) is 1.0±0.05Vp-p as shown in Fig. E-2.

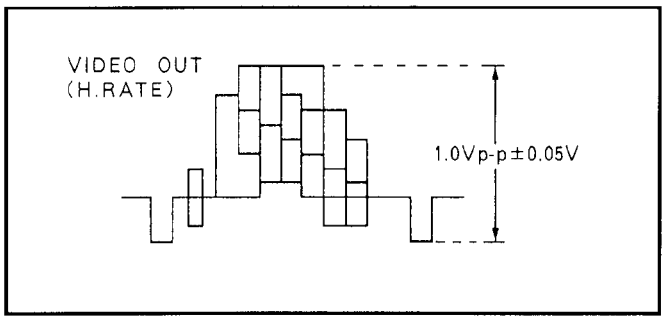


Fig. E-2

5-3-2. S-VHS REC CURRENT ADJ.

BOARD	TP:HEAD AMP C.B.A. ADJ.:MAIN C.B.A.
TP	TP507(HOT)(B-2), TP508(GND)(B-1)
ADJ.	REC Y : VR3006(F-4), REC C : VR3003(G-4)
MODE	REC
INPUT	COLOR BAR
TAPE	S-VHS BLANK TAPE
M. EQ	OSCILLOSCOPE
SPEC.	Y : 140±5mVp-p, C : 40±2mVp-p

1. Turn VR3006 to reduce the luminance component.
2. Adjust VR3003 so that the level at CYAN is 40±5mVp-p as shown in Fig. E-3.
3. Adjust VR3006 so that the level at V-SYNC is 140±5mVp-p as shown in Fig. E-4.

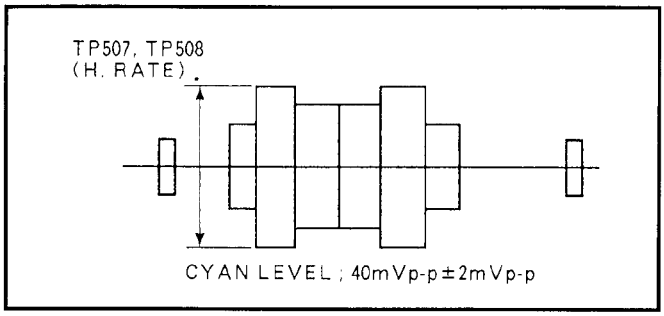


Fig. E-3

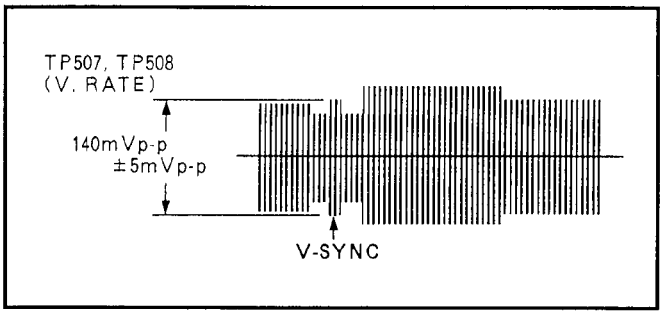


Fig. E-4

5-3-3. VHS REC CURRENT ADJ.

BOARD	TP: HEAD AMP C.B.A. ADJ.: MAIN C.B.A.
TP	TP507(HOT)(B-2), TP508(GND)(B-1)
ADJ.	VR3007(F-4)
MODE	REC
INPUT	COLOR BAR
TAPE	VHS BLANK TAPE
M. EQ	OSCILLOSCOPE
SPEC.	140±5mVp-p

1. Adjust VR3007 so that the level at V-SYNC is 140±5mVp-p as shown in Fig. E-5.

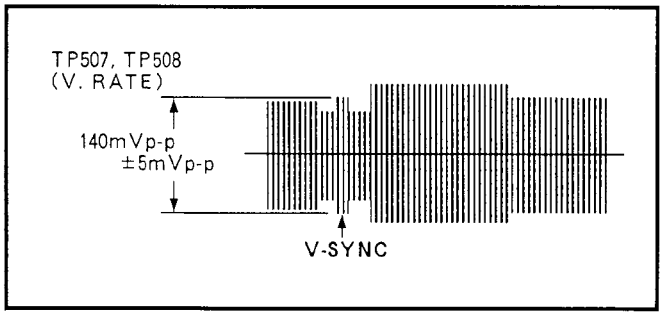


Fig. E-5

5-3-4. VHS Y PB LEVEL ADJ.

BOARD	Y/C PACK C.B.A.
TP	VIDEO OUT TERMINAL(75Ω Termination)
ADJ.	VR30006(A-8)
MODE	REC ⇒ PLAY
INPUT	COLOR BAR
TAPE	VHS BLANK TAPE
M. EQ	OSCILLOSCOPE
SPEC.	1.0±0.05Vp-p

1. Adjust VR30006 so that the Y level (from SYNC TIP to 100% White) is 1.0±0.05Vp-p as shown in Fig. E-6.

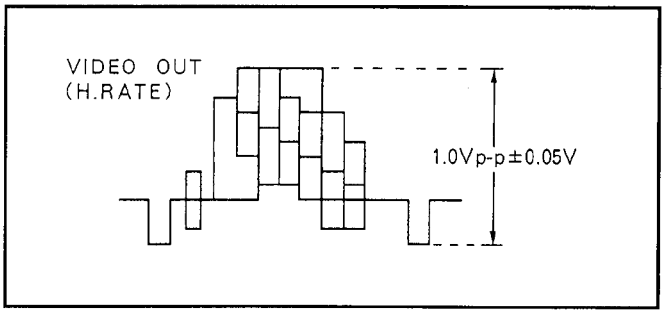


Fig. E-6

5-3-5. S-VHS Y PB LEVEL ADJ.

BOARD	Y/C PACK C.B.A.
TP	VIDEO OUT TERMINAL(75Ω Termination)
ADJ.	VR30005(A-7)
MODE	REC ⇒ PLAY
INPUT	COLOR BAR
TAPE	S-VHS BLANK TAPE
M. EQ	OSCILLOSCOPE
SPEC.	1.0±0.05Vp-p

1. Adjust VR30005 so that the Y level (from SYNC TIP to 100% White) is 1.0±0.05Vp-p as shown in Fig. E-7.

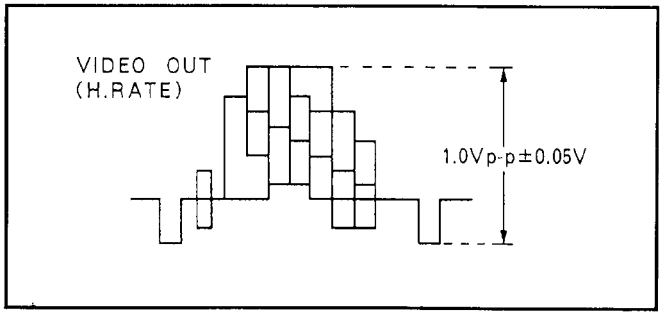


Fig. E-7

5-3-6. COS EQ PEAK ADJ.

BOARD	MAIN C.B.A.
TP	CP3005(D-5)
ADJ.	VR3002(H-6)
MODE	STOP
INPUT	SWEEP SIGNAL (20mVp-p)
TAPE	S-VHS BLANK TAPE
M. EQ	OSCILLOSCOPE
SPEC.	MAXIMUM = 7.2 $^{+0.2}_{-0.1}$ MHz

1. Connect the Service Circuit to CP 3009 as shown in Fig. E-8 and supply the sweep signal.
2. Set the output level of sweep signal generator to 20mVp-p at 7.2MHz marker.
3. Turn VR3001 fully counterclockwise.
4. Adjust VR3002 so that the level at 7.2 MHz is maximum as shown in Fig. E-9.

Note : After performing this adjustment, "5-3-7. S-VHS FREQUENCY ADJ." must be done.

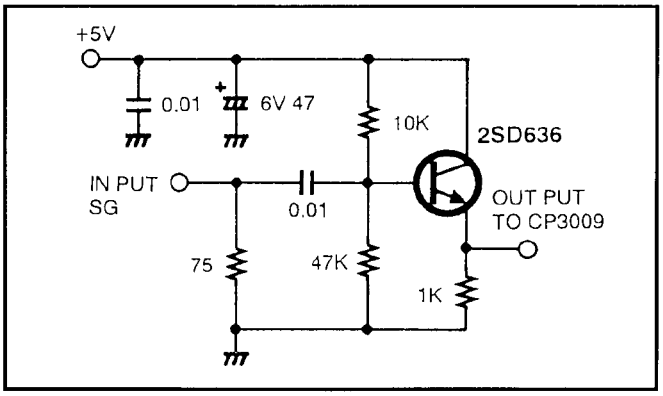


Fig. E-8

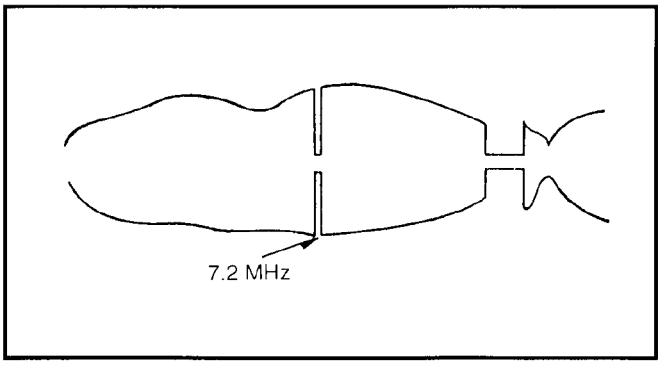


Fig. E-9

5-3-7. S-VHS FREQUENCY RESPONSE ADJ.

BOARD	MAIN C.B.A.
TP	VIDEO OUT TERMINAL(75Ω Termination)
ADJ.	VR3001
MODE	REC ⇒ PLAY
INPUT	30% SWEEP SIGNAL
TAPE	S-VHS BLANK TAPE
M. EQ	OSCILLOSCOPE
SPEC.	100kHz : 4MHz = 5 : 3.5 $^{+0}_{-0.5}$

1. Adjust VR3001 so that the sweep signal is 100kHz : 4MHz = 5 : 3.5 $^{+0}_{-0.5}$ as shown in Fig. E-10.

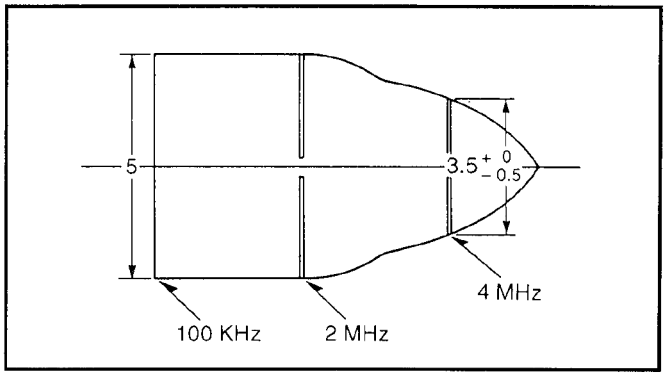


Fig. E-10

5-4. AUDIO SECTION

5-4-1. EE LEVEL ADJ.

BOARD	MAIN C.B.A.
TP	AUDIO OUT TERMINAL
ADJ.	CH1 : VR4804(H-4), CH2 : VR4803(I-3)
MODE	STOP
INPUT	1kHz, -10dBV SINWAVE
TAPE	-----
M. EQ	V.T.V.M.
SPEC.	-8.0±0.5dBV

1. Set the Hi-Fi REC LEVEL CONTROL at the center position「5」.
2. Adjust VR4804 so that the EE level of CH1(L) is -8.0±0.5dBV.
3. Adjust VR4803 so that the EE level of CH2(R) is -8.0±0.5dBV.

5-4-2. LEVEL METER ADJ.

BOARD	TIMER C.B.A.
TP	AUDIO OUT TERMINAL
ADJ.	VR6501
MODE	STOP
INPUT	1kHz, -10dBV SINEWAVE
TAPE	-----
M. EQ	LEVEL METER of FRONT PANEL
SPEC.	0dB Indicator just lights up

1. Set the Hi-Fi REC LEVEL CONTROL at the center position「5」.
2. Adjust VR6501 so that 0dB Indicator just lights up on the level meter of front panel.

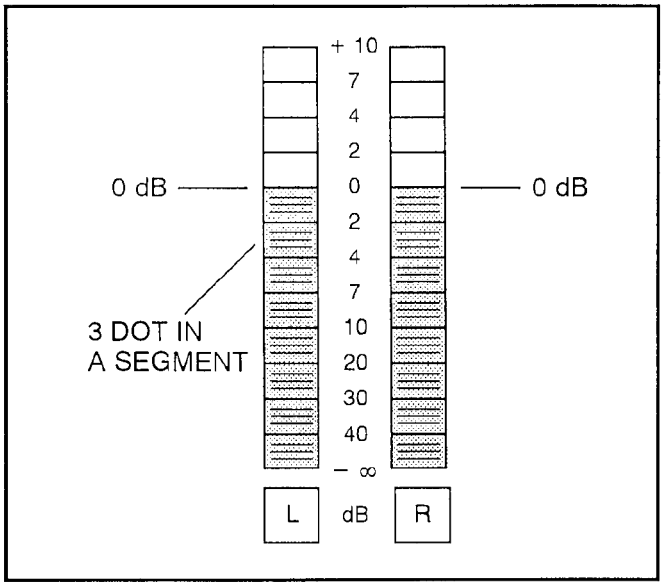


Fig. E-11

5-4-3. NORMAL AUDIO BIAS CURRENT ADJ.

BOARD	MAIN C.B.A.
TP	TP4801(HOT)(F-3), TP4802(GND)(F-3)
ADJ.	VR4802(F-2)
MODE	REC
INPUT	-----
TAPE	S-VHS BLANK TAPE
M. EQ	V.T.V.M.
SPEC.	3.0±0.1mVrms

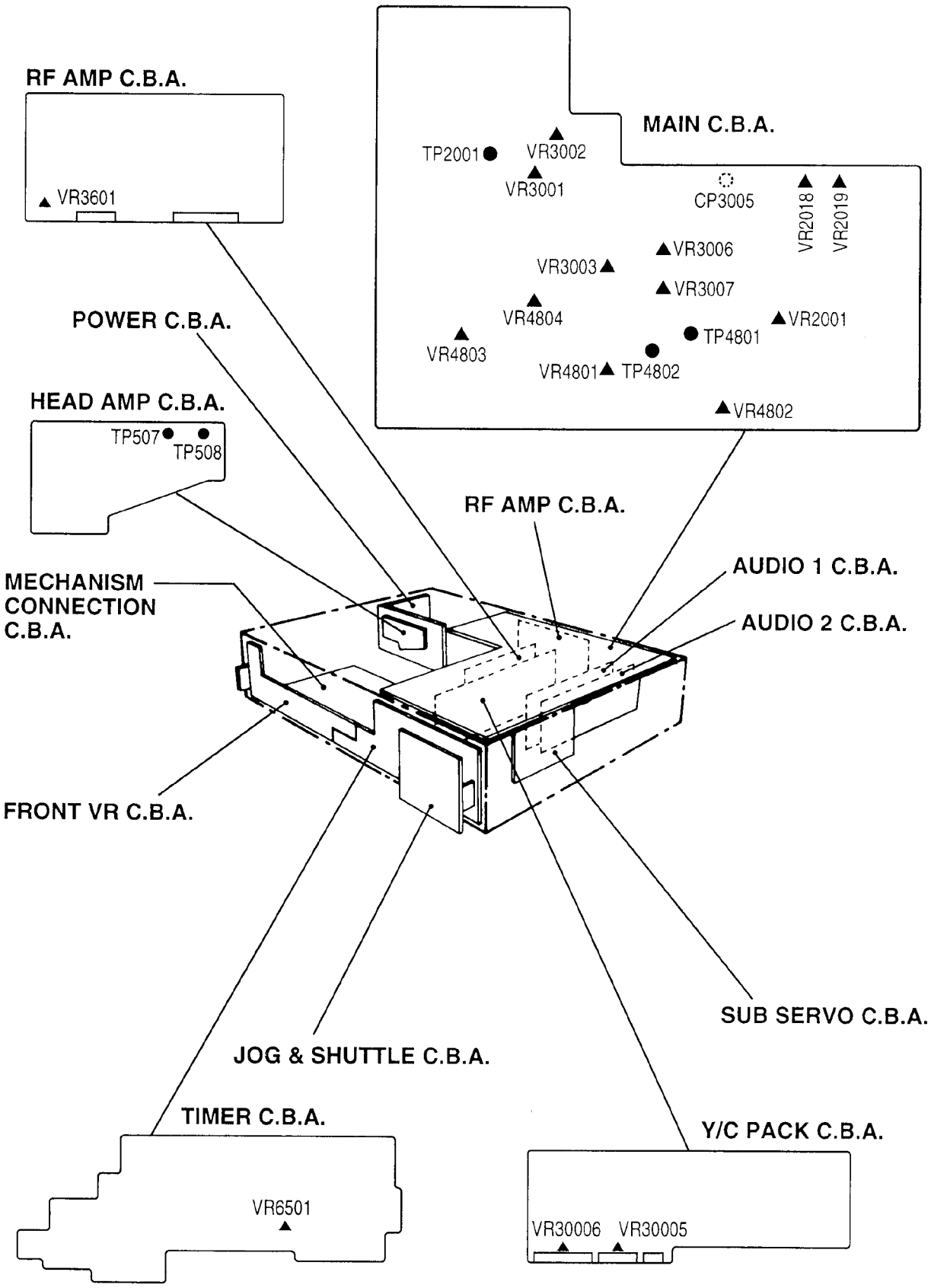
1. Adjust VR4802 so that the level is 3.0±0.1mVrms.

5-4-4. NORMAL AUDIO PB LEVEL ADJ.

BOARD	MAIN C.B.A.
TP	AUDIO OUT TERMINAL
ADJ.	VR4801(G-3)
MODE	REC ⇒ PLAY
INPUT	1kHz, -10dBV SINEWAVE
TAPE	S-VHS BLANK TAPE
M. EQ	V.T.V.M.
SPEC.	-8.0±2dBV

1. Adjust VR4801 so that the output level is -8.0±2dBV.

5 – 5. CIRCUIT BOARD LAYOUT AND LOCATIONS OF TEST POINT & ADJUSTMENT COMPONENT



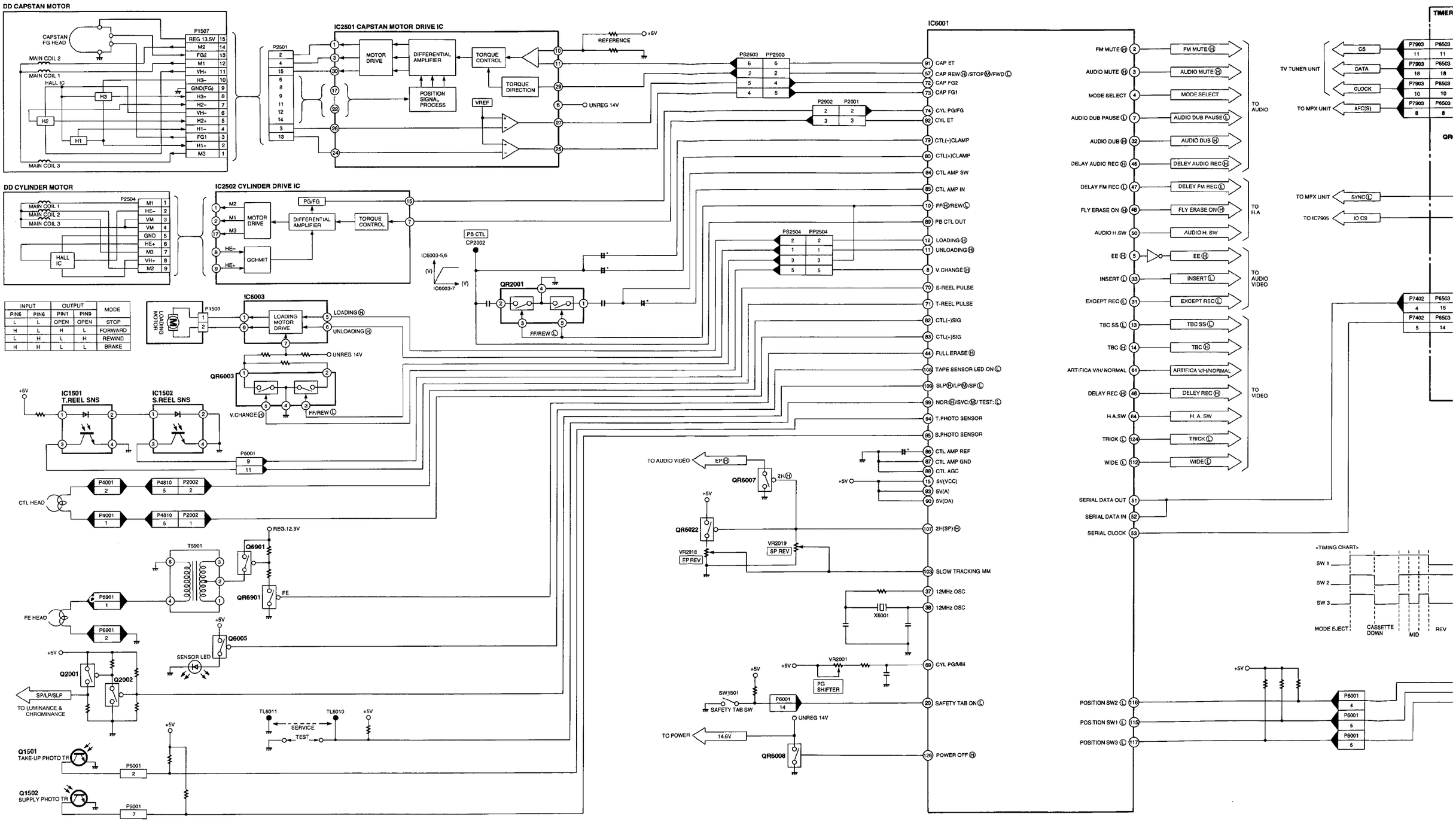
SECTION 6

BLOCK DIAGRAMS

CONTENTS

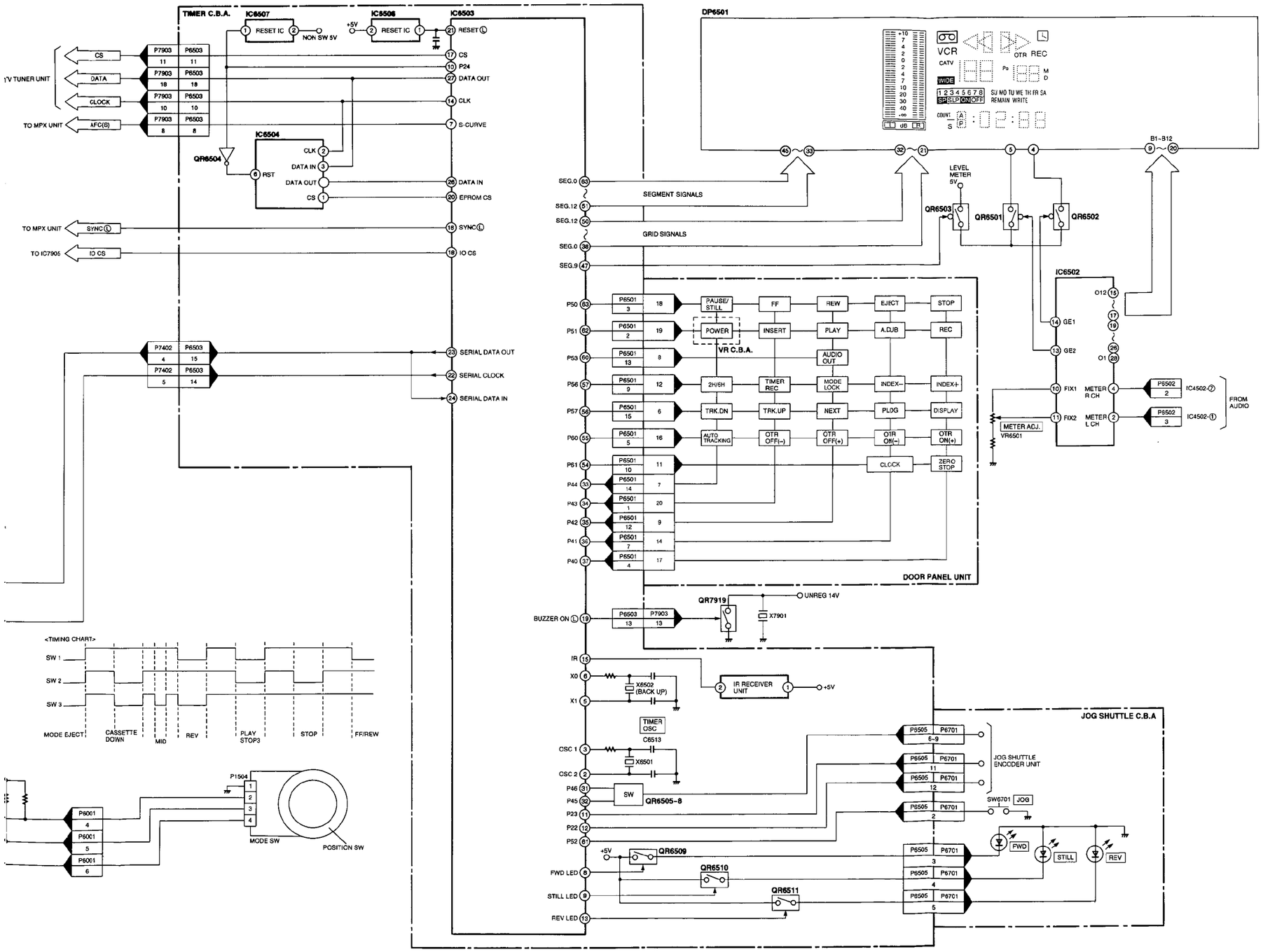
6-1. SYSTEM CONTROL & SERVO SECTION BLOCK DIAGRAM ····· BLK-1
6-2. AUDIO SECTION BLOCK DIAGRAM ····· BLK-2
6-3. VIDEO (ANALOG) SECTION BLOCK DIAGRAM ····· BLK-3
6-4. VIDEO (DIGITAL) SECTION BLOCK DIAGRAM ····· BLK-4

6-1. SYSTEM CONTROL & SERVO SECTION BLOCK DIAGRAM



BLK–1

BLK–1



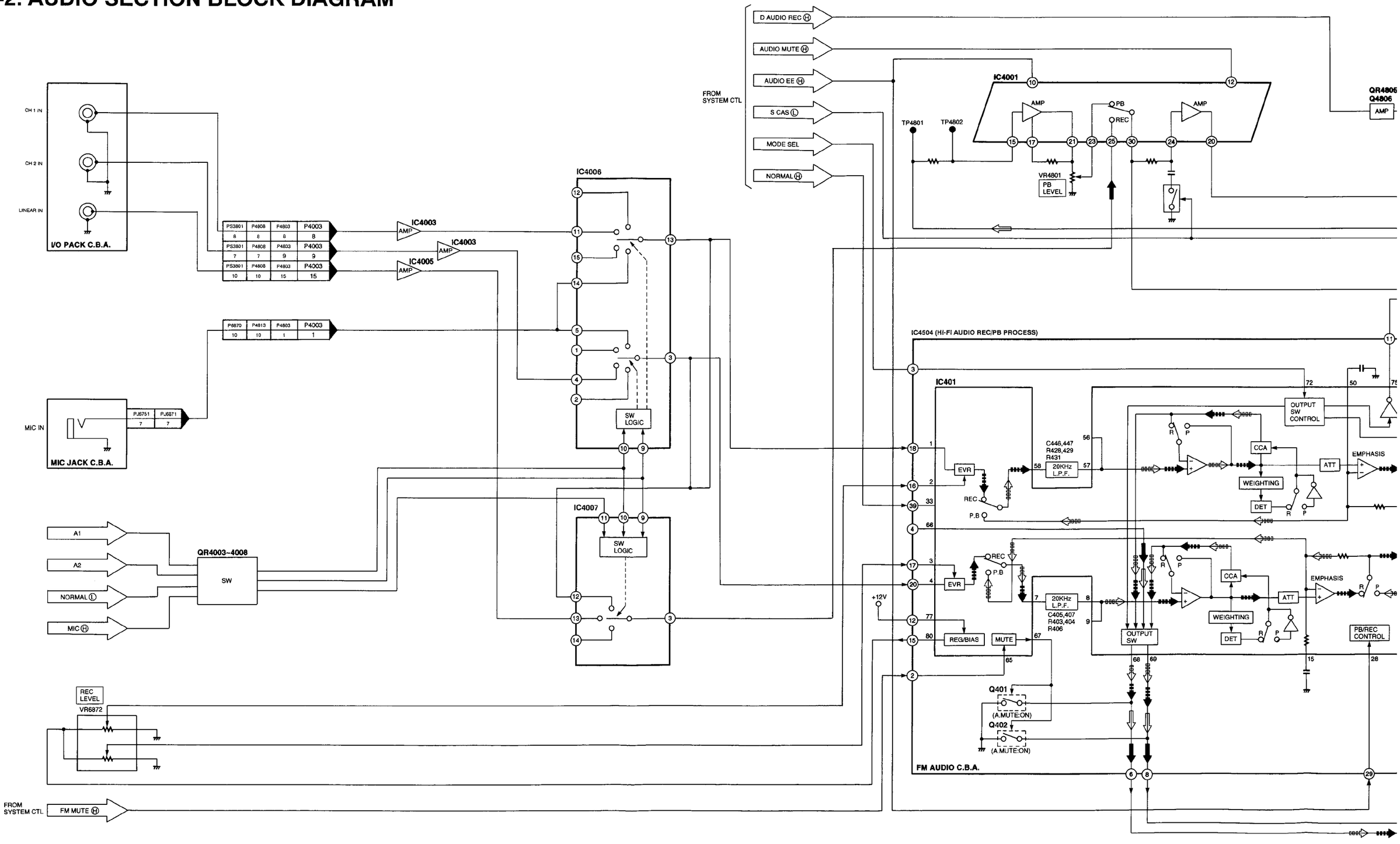
SYMBOL	TRUTH VALUE TABLE
INVERTER	IN: (a) H L / OUT: (b) L H
COMPARTOR	IN: (a)/(b) (a)>(b) (a)<(b) / OUT: (c) H L
AND CIRCUIT	IN: (a) L L H H; (b) L H L H / OUT: (c) L L L H
OR CIRCUIT	IN: (a) L L H H; (b) L H L H / OUT: (c) L H H H
THREE STATES BUFFER	IN: (a) H L H or L; (b) L L H / OUT: (c) H L ※
TR. SW (NPN TYPE)	BASE: H L / TR. SW: ON OFF
TR. SW (PNP TYPE)	BASE: H L / TR. SW: OFF ON
R-S TYPE FLIP-FLOP	IN: (a) L L ⊓; (b) L ⊔ L / OUT: (c) ※ L H; (d) ◆ H L

※ High impedance

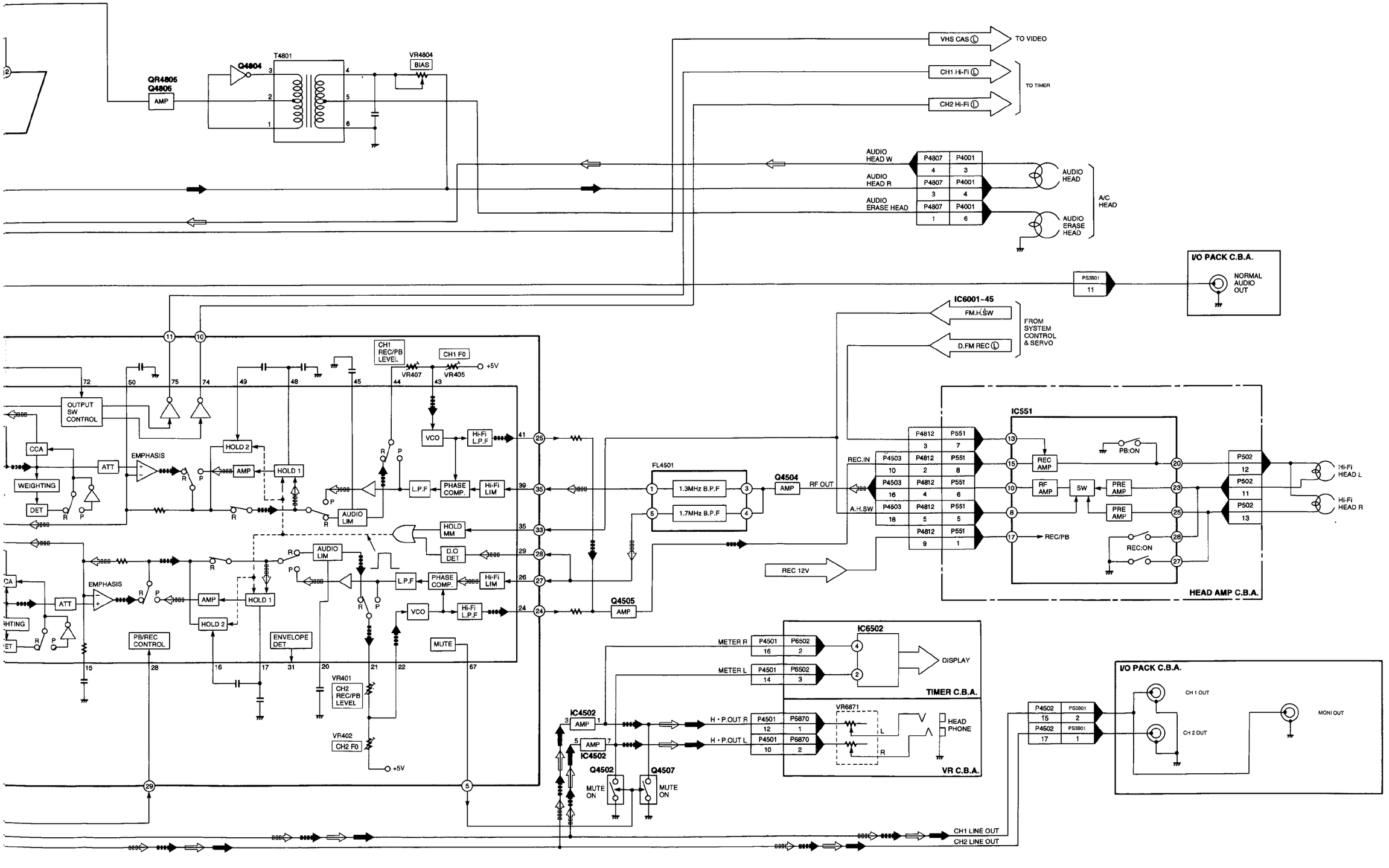
※ Initial condition is maintained.
◆ Initial condition is reversed.

BLK–1

6-2. AUDIO SECTION BLOCK DIAGRAM



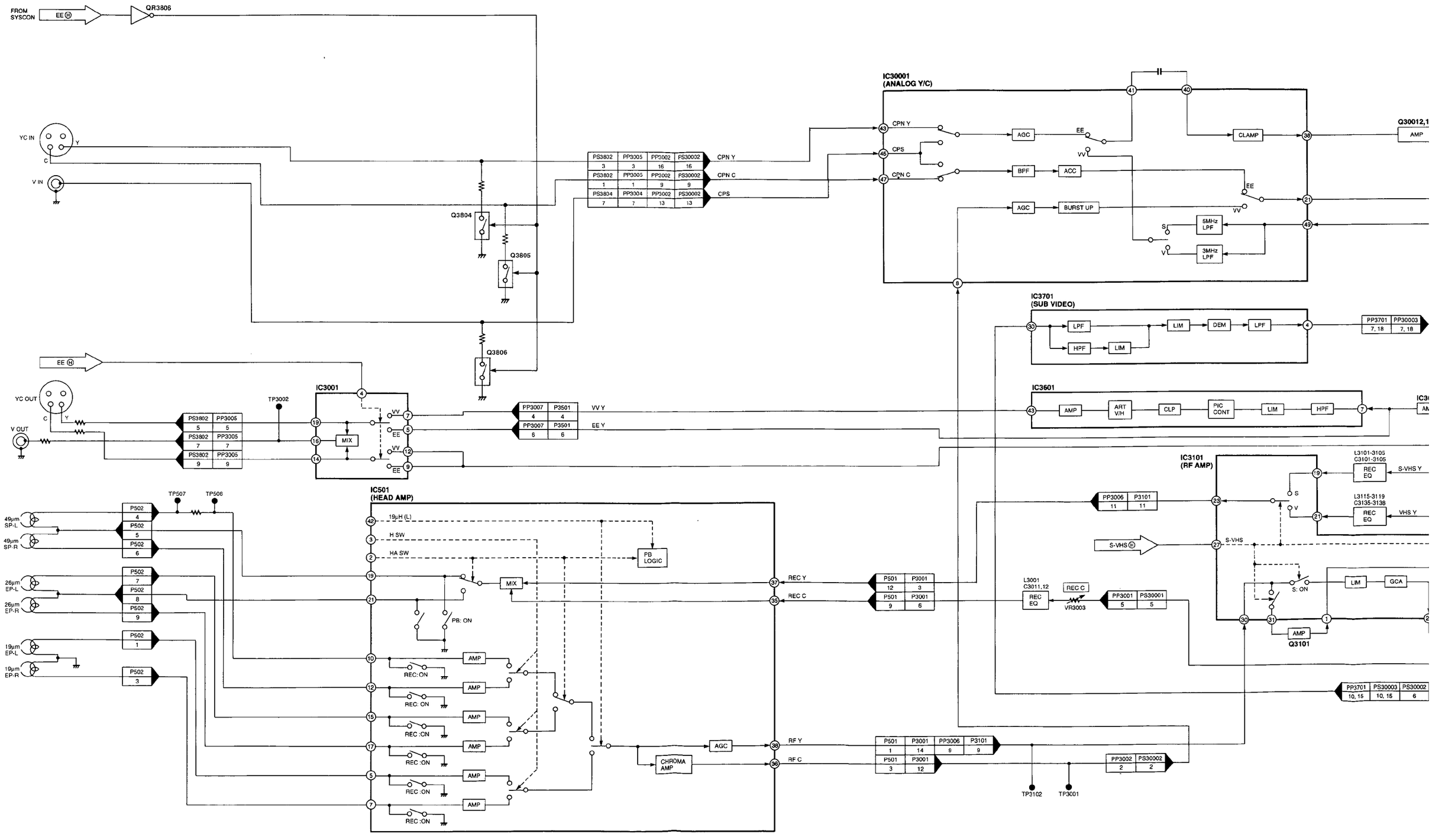
BLK–2


VHS CAS Ⓛ
TO VIDEO
CH1 Hi-Fi Ⓛ
CH2 Hi-Fi Ⓛ
TO TIMER
T4801
Q4804
VR4804
BIAS
QR4805
Q4806
AMP
AUDIO HEAD W
AUDIO HEAD R
AUDIO ERASE HEAD
P4807
P4001
AUDIO HEAD
AUDIO ERASE HEAD
A/C HEAD
I/O PACK C.B.A.
PS3801
11
NORMAL AUDIO OUT
IC6001~45
FM.H.SW
D.FM REC Ⓛ
FROM SYSTEM CONTROL & SERVO
CH1 REC/PB LEVEL
CH1 F0
VR407
VR405
+5V
OUTPUT SW CONTROL
CCA
WEIGHTING
DET
ATT
EMPHASIS
HOLD 2
AMP
HOLD 1
AUDIO LIM
VCO
Hi-Fi L.P.F
L.P.F
PHASE COMP.
Hi-Fi LIM
HOLD MM
D.O DET
FL4501
1.3MHz B.P.F
1.7MHz B.P.F
Q4504
RF OUT
REC.IN
A.H.SW
REC 12V
IC551
REC AMP
RF AMP
SW
PRE AMP
PB:ON
REC:ON
REC/PB
P502
Hi-Fi HEAD L
Hi-Fi HEAD R
HEAD AMP C.B.A.
Q4505
PB/REC CONTROL
ENVELOPE DET
MUTE
VR401
CH2 REC/PB LEVEL
VR402
CH2 F0
IC4502
Q4502
Q4507
MUTE ON
METER R
METER L
IC6502
DISPLAY
TIMER C.B.A.
H・P.OUT R
H・P.OUT L
VR6871
HEAD PHONE
VR C.B.A.
CH1 LINE OUT
CH2 LINE OUT
CH 1 OUT
CH 2 OUT
MONI OUT

BLK–2

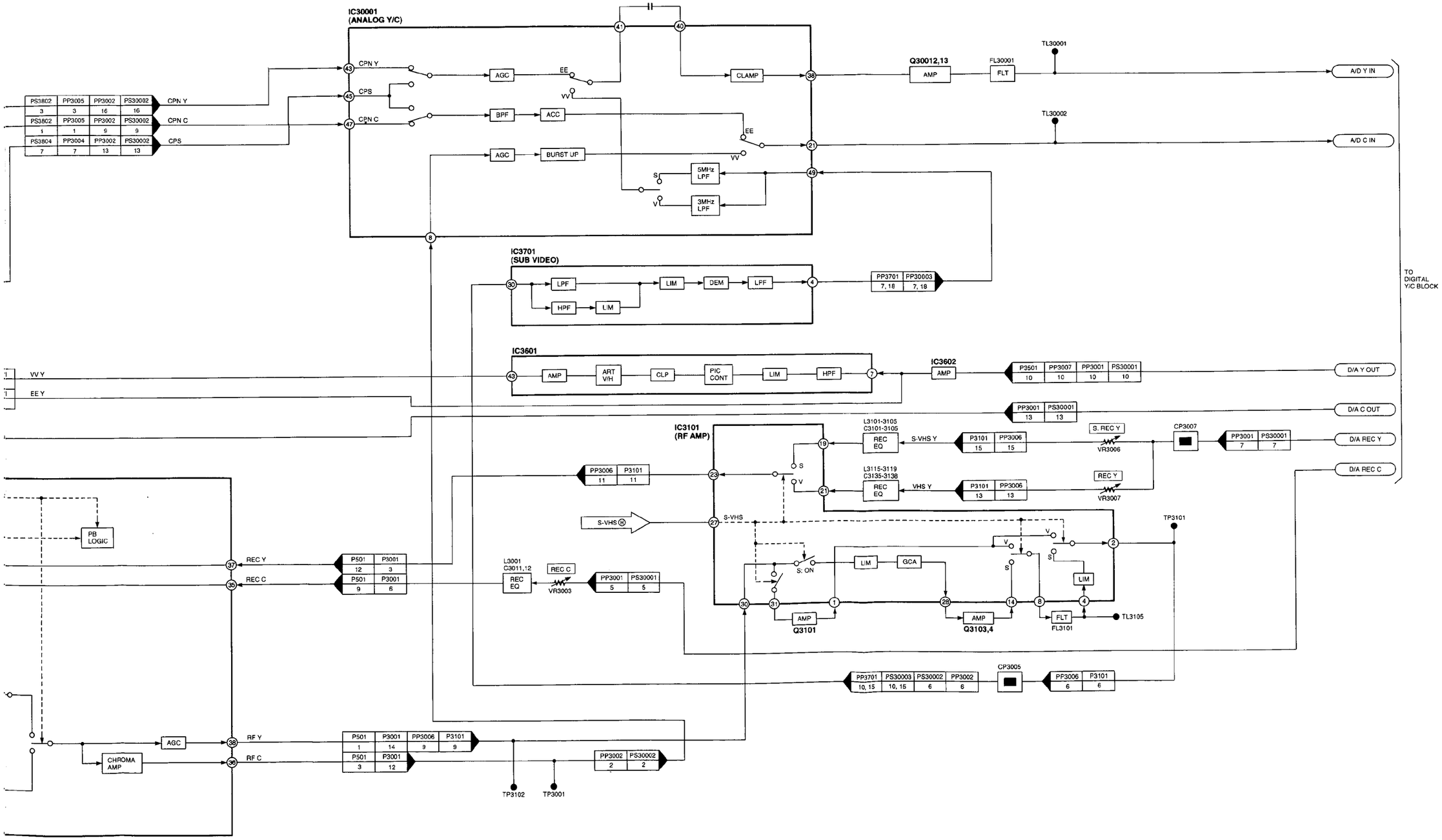
BLK–2

6-3. VIDEO (ANALOG) SECTION BLOCK DIAGRAM



BLK–3

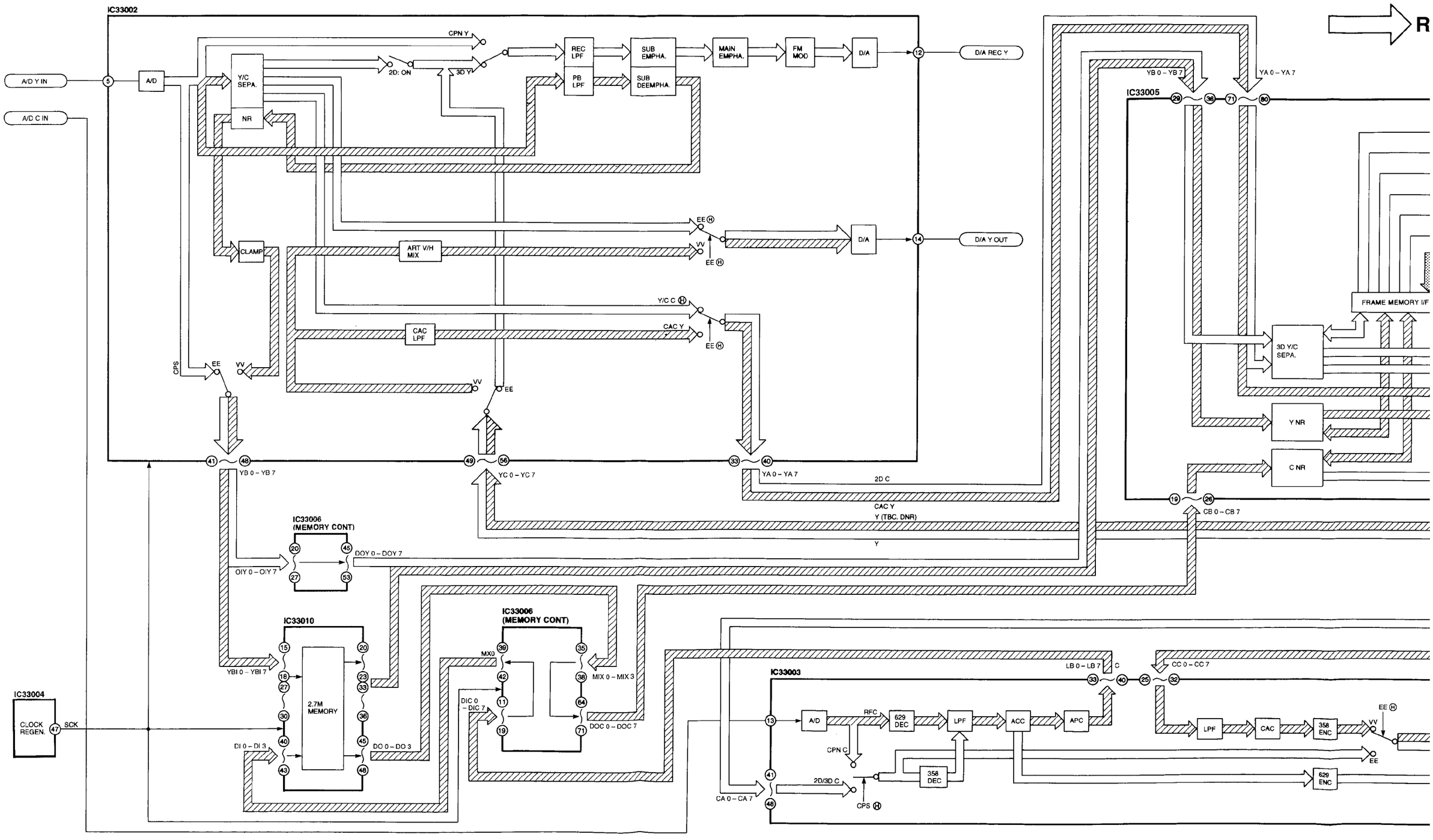
BLK–3


IC30001
(ANALOG Y/C)
CPN Y
CPS
CPN C
AGC
EE
VV
CLAMP
BPF
ACC
BURST UP
5MHz LPF
3MHz LPF
Q30012,13
AMP
FL30001
FLT
TL30001
TL30002
A/D Y IN
A/D C IN
TO DIGITAL Y/C BLOCK
IC3701
(SUB VIDEO)
LPF
HPF
LIM
DEM
IC3601
ART V/H
CLP
PIC CONT
IC3602
D/A Y OUT
D/A C OUT
D/A REC Y
D/A REC C
IC3101
(RF AMP)
L3101-3105
C3101-3105
REC EQ
S-VHS Y
L3115-3119
C3135-3138
VHS Y
S. REC Y
REC Y
VR3006
VR3007
CP3007
S-VHS
S: ON
GCA
TP3101
TL3105
Q3101
Q3103,4
FL3101
L3001
C3011,12
REC C
VR3003
PB LOGIC
REC Y
REC C
AGC
CHROMA AMP
RF Y
RF C
TP3102
TP3001
CP3005
PS3802 PP3005 PP3002 PS30002
3 3 16 16 CPN Y
PS3802 PP3005 PP3002 PS30002
1 1 9 9 CPN C
PS3804 PP3004 PP3002 PS30002
7 7 13 13 CPS
PP3701 PP30003
7, 18 7, 18
P3501 PP3007 PP3001 PS30001
10 10 10 10
PP3001 PS30001
13 13
P3101 PP3006
15 15
P3101 PP3006
13 13
PP3006 P3101
11 11
PP3001 PS30001
5 5
P501 P3001
12 3
P501 P3001
9 6
P501 P3001 PP3006 P3101
1 14 9 9
P501 P3001
3 12
PP3002 PS30002
2 2
PP3001 PS30001
7 7
PP3701 PS30003 PS30002 PP3002
10, 15 10, 15 6 6
PP3006 P3101
6 6

BLK–3

BLK–3

6-4. VIDEO (DIGITAL) SECTION BLOCK DIAGRAM



REC

MEMORY

PLAYBACK

REC LPF

PB LPF

SUB EMPHA.

SUB DEEMPHA.

MAIN EMPHA.

FM MOD

D/A

12

D/A REC Y

EE Ⓗ

W

EE Ⓗ

D/A

14

D/A Y OUT

Y/C C Ⓗ

CAC Y

EE Ⓗ

33

40

YA 0 – YA 7

2D C

CAC Y

Y (TBC, DNR)

Y

YB 0 – YB 7

YA 0 – YA 7

IC33005

29

36

71

80

3D Y/C SEPA.

Y NR

C NR

FRAME MEMORY I/F

EE Ⓗ

H

L

H

L

48 OE1

48 OE0

55 MCK

82 WE1

57 WE0

47 RE

37 MI 0 – MI 7

44

49 MO 0 – MO 7

61

63 YC 0 – YC 7

70

93 CA 0 – CA 7

100

1

10 CC 0 – CC 7

	PS33001	PP34001
	1	1
	3	3
	23	23
	16	16
	21	21
	2	2
	8-15	8-15
	17-20,27-30	17-20,27-30

19

26

CB 0 – CB 7

DEC C

C

IC34001

9 WCK

20 RCK

22 OE

RE 24

5 WE

1 MI 0 – MI 7

MO 0 – MO 7 15

4

11

2M MEMORY

18

25

14

28

IC34002

9 WCK

20 RCK

22 OE

RE 24

5 WE

1 MI 0 – MI 7

MO 0 – MO 7 15

4

11

2M MEMORY

18

25

14

28

35

38 MIX 0 – MIX 3

64

71 DOC 0 – DOC 7

IC33003

LB 0 – LB 7

C

33

40

25

32

CC 0 – CC 7

13

A/D

RFC

629 DEC

LPF

ACC

APC

CPN C

41

2D/3D C

358 DEC

CPS Ⓗ

CA 0 – CA 7

48

LPF

CAC

358 ENC

EE Ⓗ

VV

EE

629 ENC

D/A

3

D/A C OUT

D/A

7

D/A REC C

BLK–4

SECTION 7

SCHEMATIC DIAGRAMS
CIRCUIT BOARD DIAGRAMS

IMPORTANT SAFETY NOTICE

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE

DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST.
AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

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7-30. AUDIO 1 C.B.A. ····· SCM-37
7-31. AUDIO 2 C.B.A. ····· SCM-38
7-32. FM AUDIO PACK C.B.A. ····· SCM-39
7-33. RF AMP C.B.A. ····· SCM-40
7-34. I/O PACK C.B.A. ····· SCM-41
7-35. HEAD AMP C.B.A. ····· SCM-42
7-36. TIMER C.B.A. ····· SCM-43
7-37. VR C.B.A. ····· SCM-44
7-38. HEADPHONE & MIC JACK C.B.A. ····· SCM-44
7-39. POWER C.B.A. ····· SCM-45
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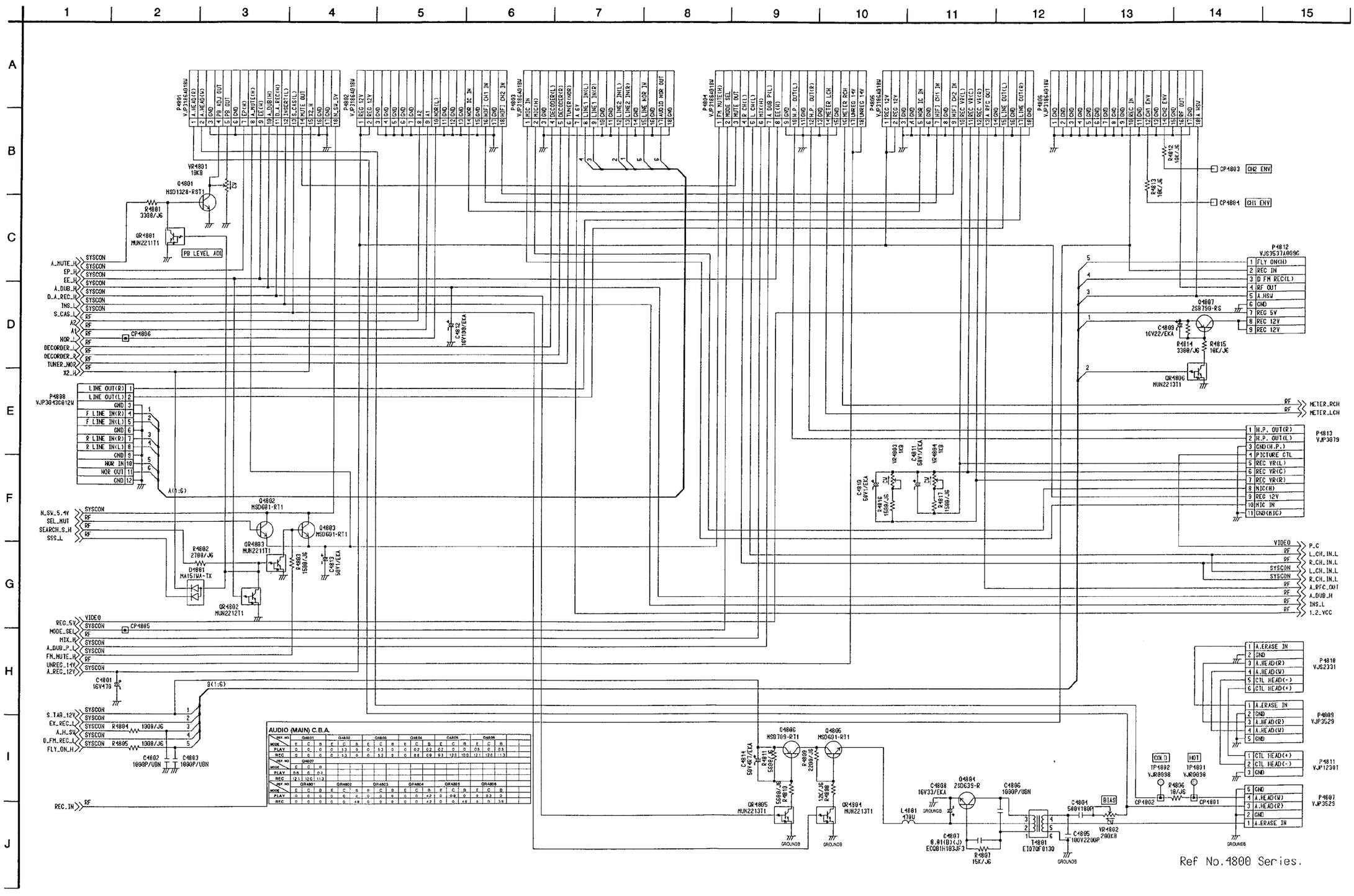
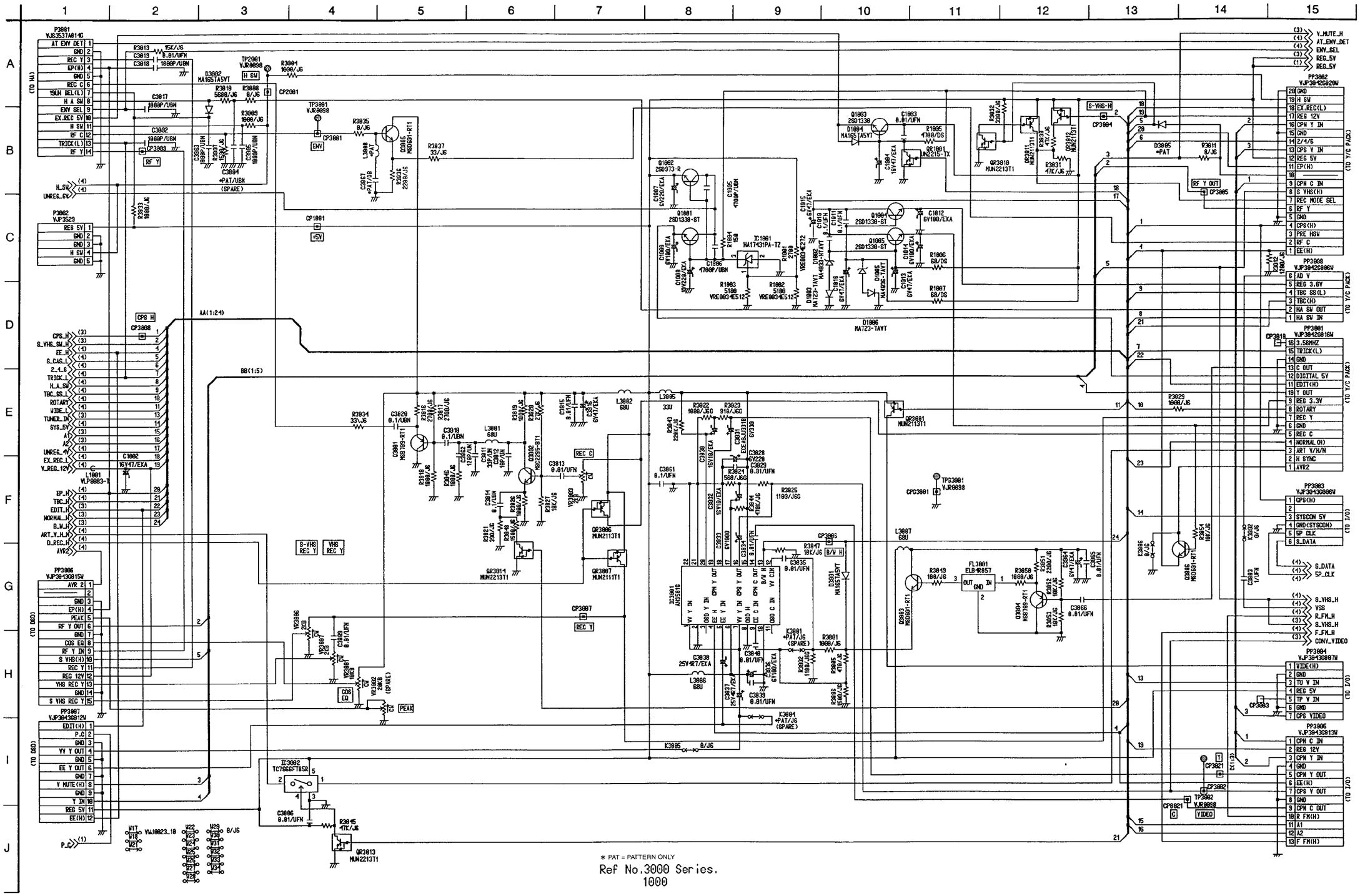
7-1. AUDIO (MAIN) SCHEMATIC DIAGRAM



SCM–1

SCM–1

7-2. VIDEO (MAIN) SCHEMATIC DIAGRAM



* PAT = PATTERN ONLY

Ref No.3000 Series.
1000

SCM–2

SCM–2

VIDEO MAIN C.B.A.

REF. NO. / MODE	IC1001		
	R	A	K
PLAY	2.4	0	5.9
REC	2.5	0	5.9

REF. NO. / MODE	IC3001																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	2.5	0	2.0	0	2.5	5.1	2.5	0	1.9	0	1.9	1.9	0	2.3	5.1	2.4	1.6	0	2.4	1.8
REC	2.5	0	2.0	4.8	2.5	5.1	2.5	0	1.9	0	1.9	1.9	0	2.3	5.1	2.3	1.6	0	2.2	1.8

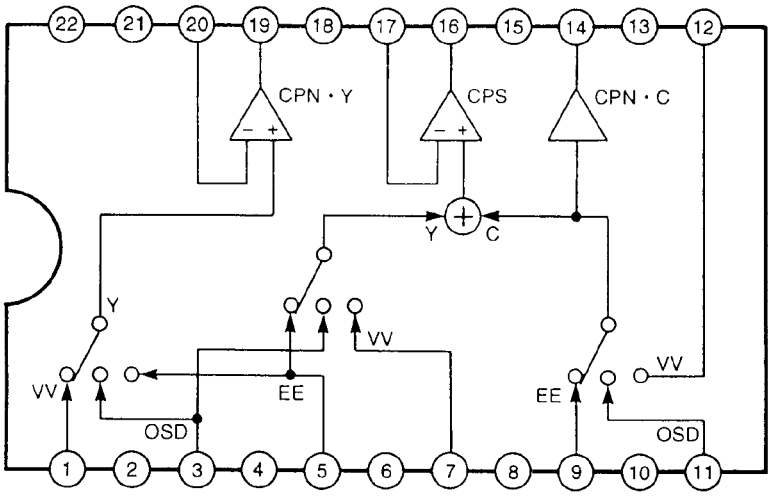
REF. NO. / MODE	IC3001		IC3002					Q1001			Q1002			Q1003			Q1004			
	21	22	1	2	3	4	5	E	C	B	E	C	B	E	C	B	E	C	B	
PLAY	0	0	0.4	0.3	0	5.1	5.1	5.2	6.0	5.9	5.2	6.0	5.9	5.1	5.1	5.8	3.7	4.3	4.3	
REC	0	0	0.4	0.3	0	5.1	5.1	5.2	6.0	5.9	5.2	6.0	5.9	0.3	5.2	0	3.7	4.3	4.3	

REF. NO. / MODE	Q1005			Q3001			Q3002			Q3003			Q3004			Q3005				
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	3.3	4.3	4.0	2.6	0.2	2.0	1.1	3.9	1.9	2.5	5.1	3.1	3.1	0	2.5	1.3	5.1	1.9		
REC	3.3	4.3	4.0	2.6	0	2.0	1.2	3.9	1.9	2.5	5.1	3.1	3.1	0	2.5	0	5.2	0		

REF. NO. / MODE	Q3006			QR1001			QR3001			QR3006			QR3007			QR3010				
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	0	0	0.5	0	5.8	0	5.1	0	5.0	5.1	5.0	0.4	5.1	5.0	0.1	0	0	4.2		
REC	4.8	0	0.5	0	0	3.8	5.1	0	5.0	5.1	2.0	5.0	0.2	3.3	5.0	0	0	4.2		

REF. NO. / MODE	QR3011			QR3012			QR3013			QR3014		
	E	C	B	E	C	B	E	C	B	E	C	B
PLAY	5.1	5.1	0	5.1	5.1	0	0	5.1	0	0	0	0
REC	5.2	5.1	0	5.2	5.2	0	0	5.1	0	0	0	0

■ IC3001 (AN3581S)



RF INTERFACE C.B.A.

REF. NO. / MODE	IC1																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
PLAY	0	0	0	3.7	0	5.0	0	0	0	0.5	5.0	0.5	5.0	5.0						
REC	0	0	0	3.7	0	5.0	0	0	0	0.5	5.0	0.5	5.0	5.0						

REF. NO. / MODE	IC7901																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	6.0	0.9	6.0	6.0	6.0	0	0	0	0	12.5	12.5	6.0	6.0	6.0	6.0	12.5				
REC	6.1	2.6	6.0	6.1	6.1	0	0	0	0	12.6	12.5	6.1	6.1	6.1	6.1	12.6				

REF. NO. / MODE	IC7902								IC7903											
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8				
PLAY	6.0	6.0	6.0	0	0	6.0	6.0	0	6.0	6.0	6.0	0	2.1	2.1	12.1	12.5				
REC	6.0	6.0	6.0	0	6.0	6.0	6.0	0	6.0	6.0	6.0	0	2.2	2.0	12.1	12.5				

REF. NO. / MODE	IC7905																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	4.1	4.7	4.9	5.0	5.0	0	3.5	5.0	0	0	0	0	0	0	3.7	0	5.0	0	5.0
REC	0	4.1	4.8	4.9	5.0	5.0	0	3.5	5.0	0	0	0	0	0	0	3.7	0	5.0	0	5.0

REF. NO. / MODE	Q7901			Q7902			Q7903			Q7904			Q7905			Q7906				
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	0	0	0.4	12.6	14.6	13.2	12.6	14.6	13.2	0.9	12.5	0	4.6	0	3.8	4.1	5.1	4.6		
REC	0	0	0.4	0	0	0	0	0	0	0	12.6	0	4.3	0	3.4	3.7	5.2	4.3		

REF. NO. / MODE	Q7907			Q7908																
	E	C	B	E	C	B														
PLAY	5.2	5.3	5.8	5.8	0	5.1														
REC	5.2	5.3	5.8	5.8	0	5.2														

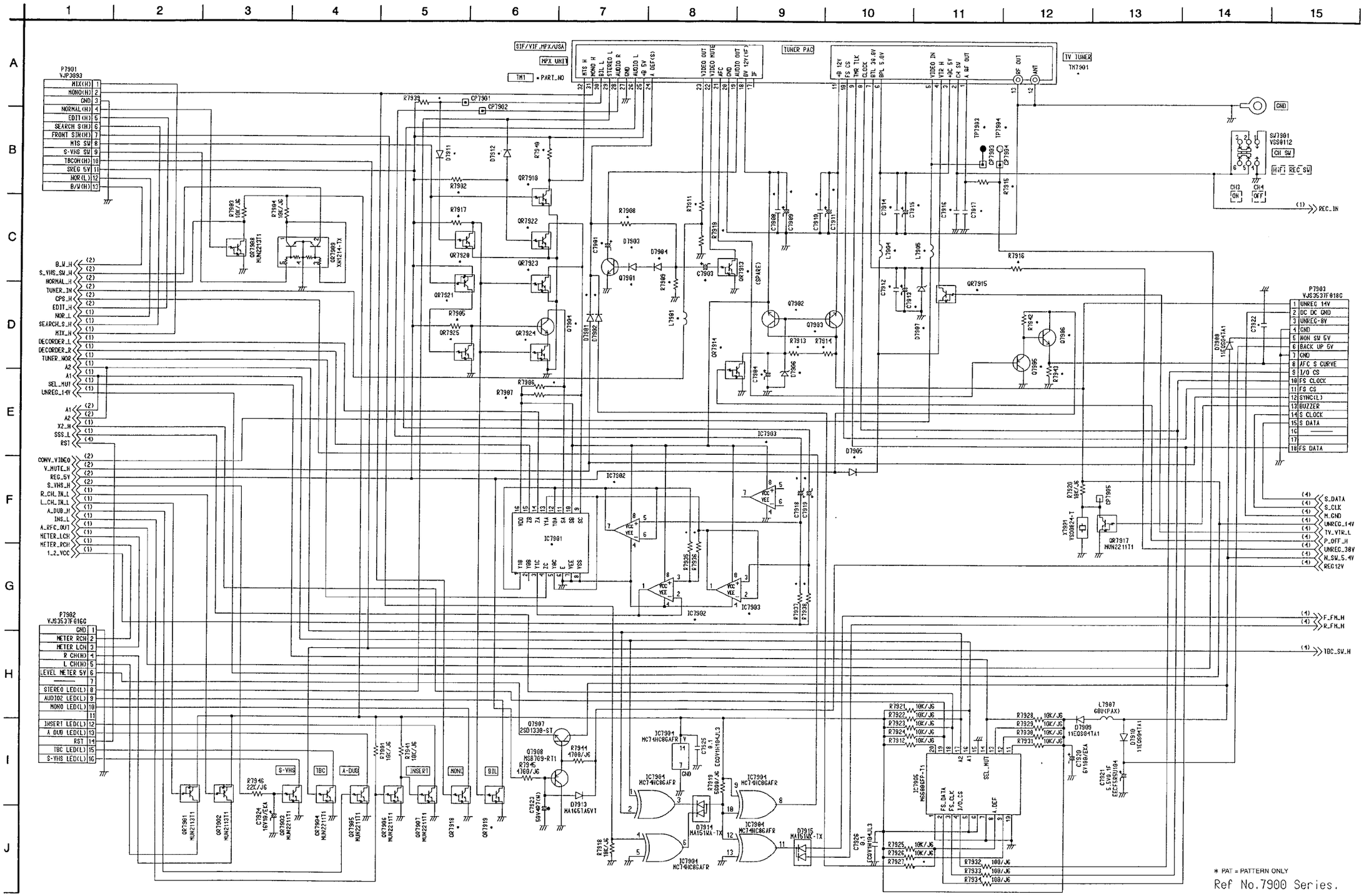
REF. NO. / MODE	QR7901			QR7902			QR7903			QR7904			QR7905			QR7906				
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	5.0	5.0	0.4	5.0	5.0	0.4	0	2.8	0	0	4.1	0	0	3.7	0	0	0	3.4		
REC	5.0	5.0	0.4	5.0	5.0	0.4	0	3.6	0	0	4.4	0	0	4.1	0	0	0	3.4		

REF. NO. / MODE	QR7907			QR7908			QR7909					QR7910			QR7913			QR7914		
	E	C	B	E	C	B	1	2	3	4	5	E	C	B	E	C	B	E	C	B
PLAY	0	3.7	0	0	4.2	0	2.8	0	2.8	0	0	0	5.1	0	0	12.2	0	0	13.2	0
REC	0	0	0	0	4.2	0	0	0	0	0	0	0	5.2	0	0	12.2	0	0	0	0

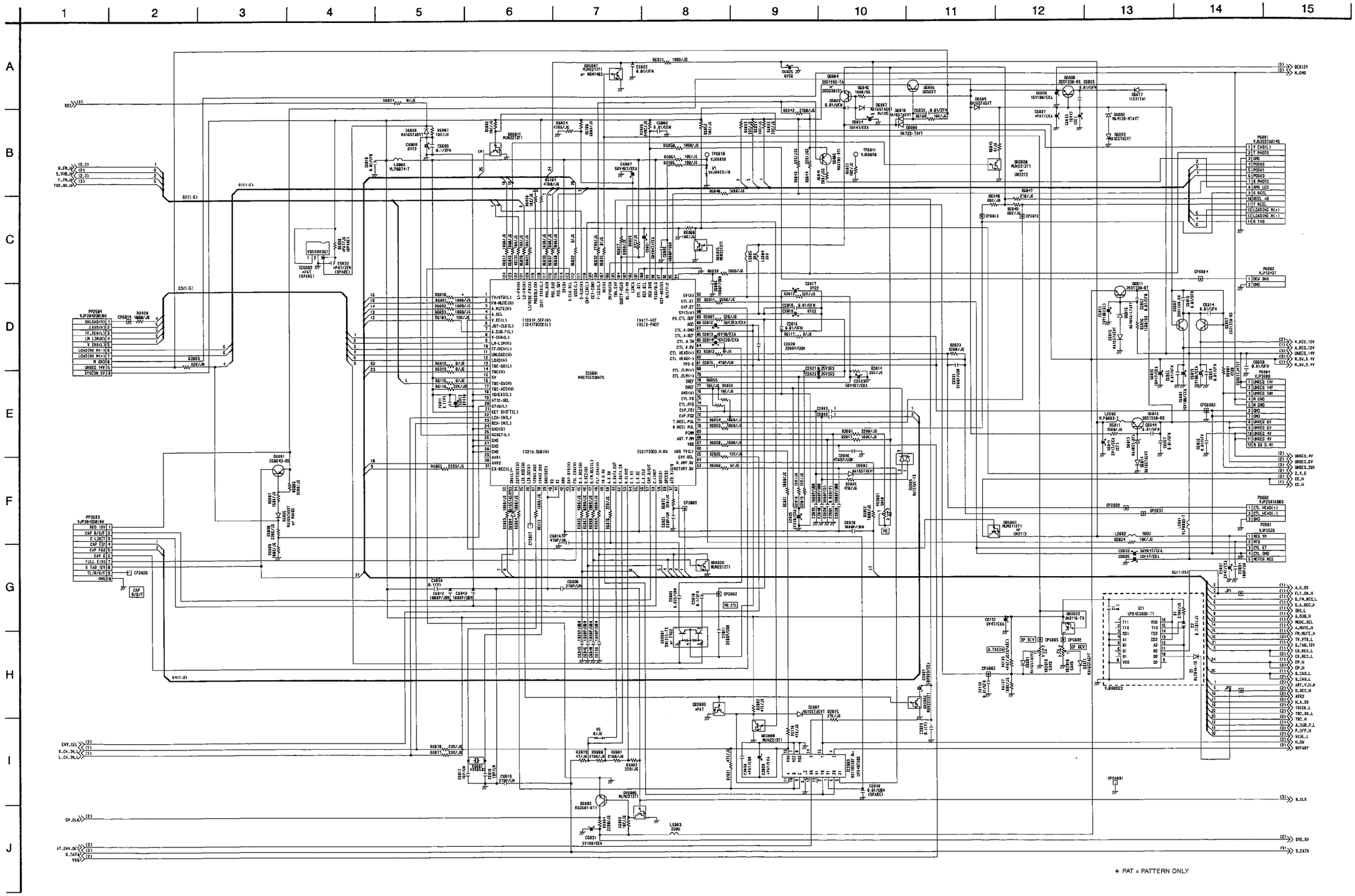
REF. NO. / MODE	QR7915			QR7917			QR7918			QR7919			QR7920			QR7921				
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	4.8	4.8	0	0	0	4.9	0	4.0	0	0	3.9	0	0	0	0	5.1	5.1	0		
REC	0	0	0	0	0	0	0	0	0	0	4.1	0	0	0	3.9	5.2	5.2	0		

REF. NO. / MODE	QR7922			QR7923			QR7924			QR7925										
	E	C	B	E	C	B	E	C	B	E	C	B								
PLAY	0	0	4.2	0	0	0	0	1.4	0	0	0	5.1								
REC	0	0	0	0	0	0	0	1.5	0	0	0	5.2								

7-3. RF INTERFACE SCHEMATIC DIAGRAM



7-4. SYSTEM CONTROL & SERVO SCHEMATIC DIAGRAM



* PAT = PATTERN ONLY

SCM–6

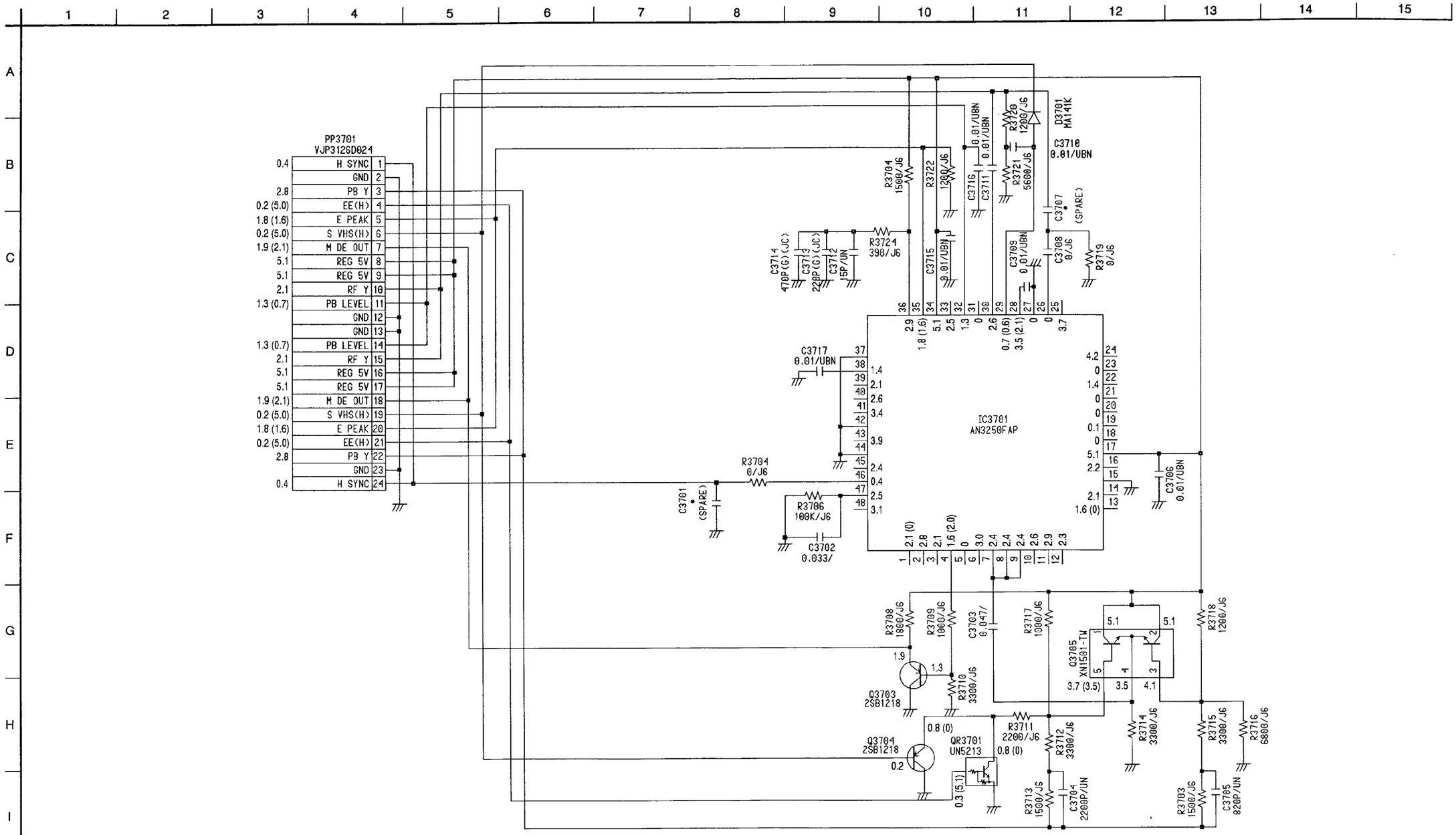
SYSCON/SERVO C.B.A.

REF. NO. / MODE	IC2003																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	4.9	5.0	4.9	4.9	5.0	0	0	0	5.0	5.0	0	3.2	0.5	3.3	4.9	5.0				
REC	4.9	4.9	4.9	4.9	4.9	0	0	0	4.9	4.9	0	0.1	0.2	0.1	4.9	5.0				
REF. NO. / MODE	IC6001																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0	0	5.0	5.0	5.0	4.9	4.9	0	4.9	0	0	4.9	0	5.0	0	5.0	0	0	4.2
REC	0	0	0	5.0	0	5.0	4.9	4.9	0	4.9	0	0	4.9	0	5.0	0	4.9	0	0	0
REF. NO. / MODE	IC6001																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	5.0	0.4	0.4	0	5.0	0	0	0	5.0	0	0	0	4.9	5.0	4.9	4.9	—	—	0	4.9
REC	5.0	0.4	0.4	0	5.0	0	0	0	0	0	4.9	0	4.9	4.9	4.9	4.9	—	—	0	4.9
REF. NO. / MODE	IC6001																			
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	0	0	5.0	0	0	0	5.0	0	5.0	5.0	4.6	4.6	4.4	0.7	0	0.6	0	4.9	4.9	4.9
REC	0	0	4.9	4.9	4.9	4.9	0	0	4.9	0	4.7	4.6	4.4	0.7	0	0.7	0	4.9	4.9	4.9
REF. NO. / MODE	IC6001																			
	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	0	4.9	4.9	0	5.0	4.9	2.4	0.1	3.1	4.9	4.9	2.3	2.4	1.1	2.4	0	2.4	2.4	2.6	2.3
REC	0	4.9	4.9	0	0	4.9	2.4	0.1	3.1	4.9	4.9	2.3	2.4	0.9	2.4	0	2.4	2.4	2.3	2.5
REF. NO. / MODE	IC6001																			
	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
PLAY	4.9	0	0	0	2.4	2.4	0	2.9	2.3	5.0	2.5	2.3	4.9	4.7	4.8	5.0	0	5.0	0	0
REC	4.8	1.3	3.8	0	2.4	2.4	0	2.6	2.4	4.9	2.5	2.3	4.9	4.6	4.8	4.9	0	5.0	0	0
REF. NO. / MODE	IC6001																			
	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
PLAY	0	2.0	2.3	0.9	3.3	4.9	4.9	0	0	4.9	0.1	5.0	4.3	5.0	0	0	4.9	0	0	0
REC	0	2.0	2.3	0.9	0.1	4.9	4.9	0	0	4.9	0.1	5.0	4.3	5.0	0	0	4.9	0	0	0
REF. NO.	IC6001				IC6002			Q6001			Q6002			Q6003			Q6004			
MODE	121	122	123	124	V	G	O	E	C	B	E	C	B	E	C	B	E	C	B	
PLAY	0	0	0	4.9	5.0	0	5.1	12.3	0.7	12.3	12.3	14.6	12.9	4.3	5.2	0.1	4.9	5.0	5.7	
REC	0	0	0	4.9	5.0	0	5.1	12.3	12.1	11.5	12.3	14.6	12.9	4.3	5.2	0.2	4.9	5.0	5.7	
REF. NO.	Q6005			Q6006			Q6007			Q6008			Q6010			Q6011				
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	4.9	4.9	4.2	4.9	14.6	5.5	12.2	14.6	12.9	12.3	13.9	12.9	5.0	6.1	5.7	5.3	6.1	6.0		
REC	4.9	4.9	4.1	4.9	14.6	5.5	12.3	14.6	12.9	12.3	13.8	12.9	5.0	6.1	5.7	5.3	6.1	6.0		
REF. NO.	QR2001					QR2002			QR2008			QR6006			QR6007			QR6008		
MODE	1	2	3	4	5	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
PLAY	0	0	4.9	0	4.9	0	0	4.9	0	0	4.9	0	0.2	4.2	0	0	4.9	0	12.9	0
REC	0	0	4.9	0	4.9	0	0	4.9	0	0	4.9	0	0.1	4.2	0	0	4.9	0	12.9	0
REF. NO.	QR6009			QR6011			QR6022			QR6025										
MODE	E	C	B	E	C	B	E	C	B	E	C	B								
PLAY	5.0	0	5.0	0	4.2	0	5.0	0	4.9	0	0	4.9								
REC	5.0	4.9	0	0	4.2	0	5.0	0	4.9	0	0	4.9								

■ I/O DIVISION
IC6001 SYSTEM CONTROL

Terminal	I/O	Function	Terminal	I/O	Function	Terminal	I/O	Function
1	O	TV (H) / VTR (L)	43	O	CAP RVS (H)	85	I	CTL AMP INPUT
2	O	FM MUTE (H)	44	O	FULL ERASE (H)	86	I	CTL AMP REFERENCE VOLTAGE
3	O	AUDIO MUTE (H)	45	O	D.A. REC (H)	87	—	CTL AMP GND
4	O	AUDIO SELECT	46	O	D. REC (H)	88	I	AGC
5	O	V EE (L)	47	O	D. FM REC (H)	89	O	PLAYBACK CTL
6	O	JUST CLOCK (L)	48	O	FLYING ERASE (H)	90		5 V (D/A)
7	O	POST-SYNCH (L)	49	O	19 μ H SW	91	O	CAP TORQUE
8	O	VOLTAGE SELECT	50	O	AUDIO H SW	92	O	CYLINDER TORQUE
9	O	LOADING MOTOR LIMIT (H)	51	O	S. DATA (system cont.) OUT	93	—	5 V (ANALOG)
10	O	FF, REW (L)	52	I	S. DATA (system cont.) IN	94	I	T PHOTO SENSOR
11	O	UNLOADING (H)	53	O	S. CLOCK (system cont.) OUT	95	I	S PHOTO SENSOR
12	O	LOADING (H)	54	O	S. DATA (EXP) OUT	96	I	NORMAL (H) / SERVICE (M) / TEST (L)
13	O	TBC SS (L)	55	I	S. DATA (EXP) IN	97	—	
14	O	TBC ON (H)	56	O	S. CLOCK (EXP) OUT	98	I	VISS/BILINGUAL (EXIST/NOTHING)
15		VDD	57	O	CAP R (H) / S (M) / F (L)	99	I	DEW SENSOR
16	I	TBC SW ON (L)	58	O	CURRENT LIMIT	100	I	VSS/REC SELECT (PAL/NTSC)
17	I	TBC ADD (H)	59	—		101	I	DECK/CLY (TDD/LDD) SELECT
18	I	10 HEAD (H)	60	—		102	I	LINEARITY
19	I	AT SELECT [FERRITE (H)]	61	O	ARTIFICIAL VERTICAL SYNC V/H/N	103	I	SLOW TRACKING MM
20	I	SAFETY TAB [TAB EXIST (L)]	62	O	VIDEO HEAD SW	104	I	HEAD CLOG DETECT
21	—	———	63	O	ROTARY SW	105	I	ENVELOPE FOR TRACKING
22	I	Lch IN (L) FOR CONFIRM	64	O	HEAD AMP SW	106	O	VV 4H (L)
23	I	Rch IN (L) FOR CONFIRM	65	I	ENVELOPE SELECT	107	O	SP (H) / EP (L)
24		VSS2	66	I	AV SW TV (H)	108	O	SENSOR LED (L)
25	I	RESET	67		VSS	109	—	
26	—		68	I	ARTIFICIAL SYNC MM	110	O	ENVELOPE LINEARITY (L)
27	—		69	I	CYLINDER PG MM	111	I	S VHS (H)
28	—		70	I	S REEL PULSE	112	O	WIDE TV (L)
29	O	AVR 1	71	I	T REEL PULSE	113	O	S. CLOCK SELECT
30	O	AVR 2	72	I	CAP FG2	114	—	5 V (DIGITAL)
31	O	EX. REC (L)	73	I	CAP FG1	115	I	POSITION SW 1
32	O	POST-SYNCH (H)	74	I	CYLINDER PFG	116	I	POSITION SW 2
33	O	INSERT (L)	75	I	CYLINDER FG	117	I	POSITION SW 3
34	O	26 μ VIDEO (H)	76		VSS	118	—	
35	O	LINEARITY DISCRIMINATE MODE (L)	77	O	SERVO REFERENCE VOLTAGE	119	—	
36	O	LINEARITY OK (H)	78	I	SERVO REFERENCE VOLTAGE	120	I	L3/MUSE FM (H)
37	O	OSC 12 MHz	79	I	CTL PEAK CLAMP (–)	121	I	L2/FM (H)
38	I	OSC 12 MHz	80	I	CTL PEAK CLAMP (+)	122	I	L1/FM (H)
39		VSS	81	I	TPZ C	123	O	POWER OFF (H)
40	—		82	I/O	CTL SIGNAL (–)	124	O	SPECIAL PLAYBACK (L)
41	—		83	O	CTL SIGNAL (+)			
42	—		84	O	CTL AMP SW			

7-5. SUB VIDEO SCHEMATIC DIAGRAM



注意：回路図中の電圧値は、再生（録画）時のものです。

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH NTSC COLOUR SIGNAL. (SP MODE)
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH NTSC COLOUR SIGNAL. (SP MODE)

*=REFER TO THE COMPARISON CHART
Ref No.3700 Series.

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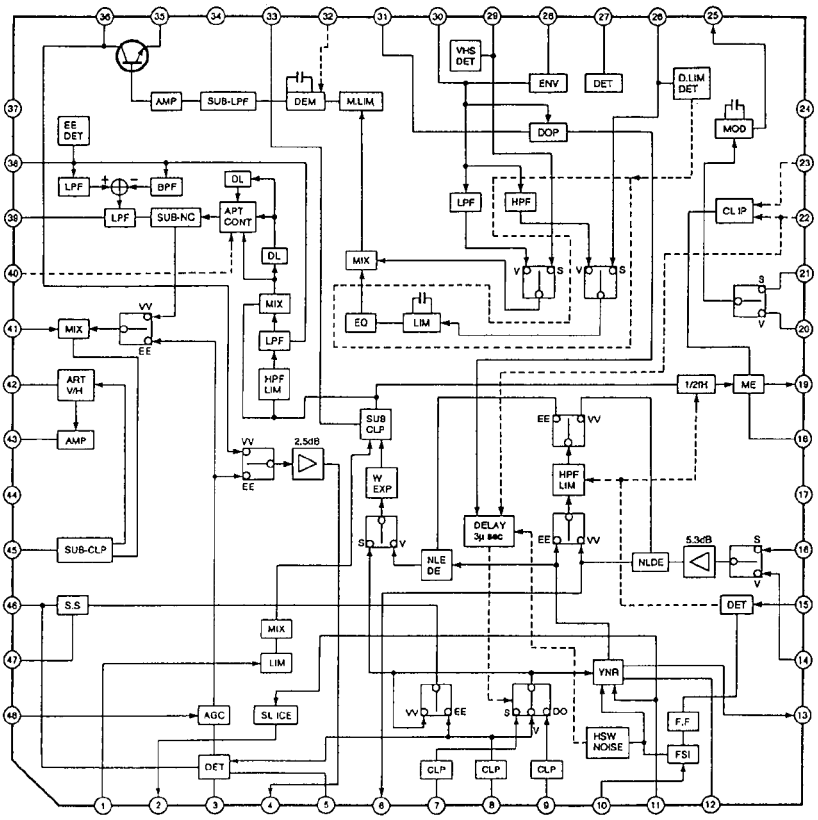
■ IC3701 (AN3250FAP)



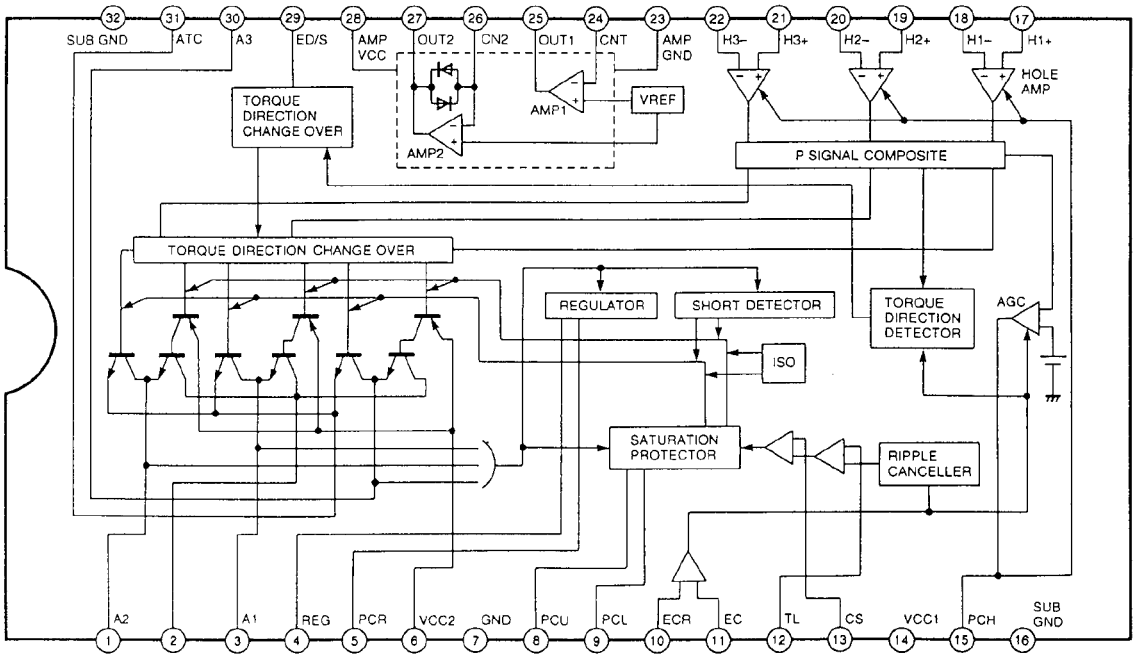
SUB SERVO C.B.A.

REF. NO. / MODE	IC2501																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	3.3	4.4	3.0	13.4	2.4	14.6	0	0.5	0.5	2.8	2.5	0.3	0	5.0	1.3	0	2.2	2.2	2.2	2.2
REC	3.0	4.4	3.0	13.4	2.3	14.6	0	0.5	0.5	2.8	2.5	0.3	0	5.0	1.3	0	2.2	2.2	2.2	2.2

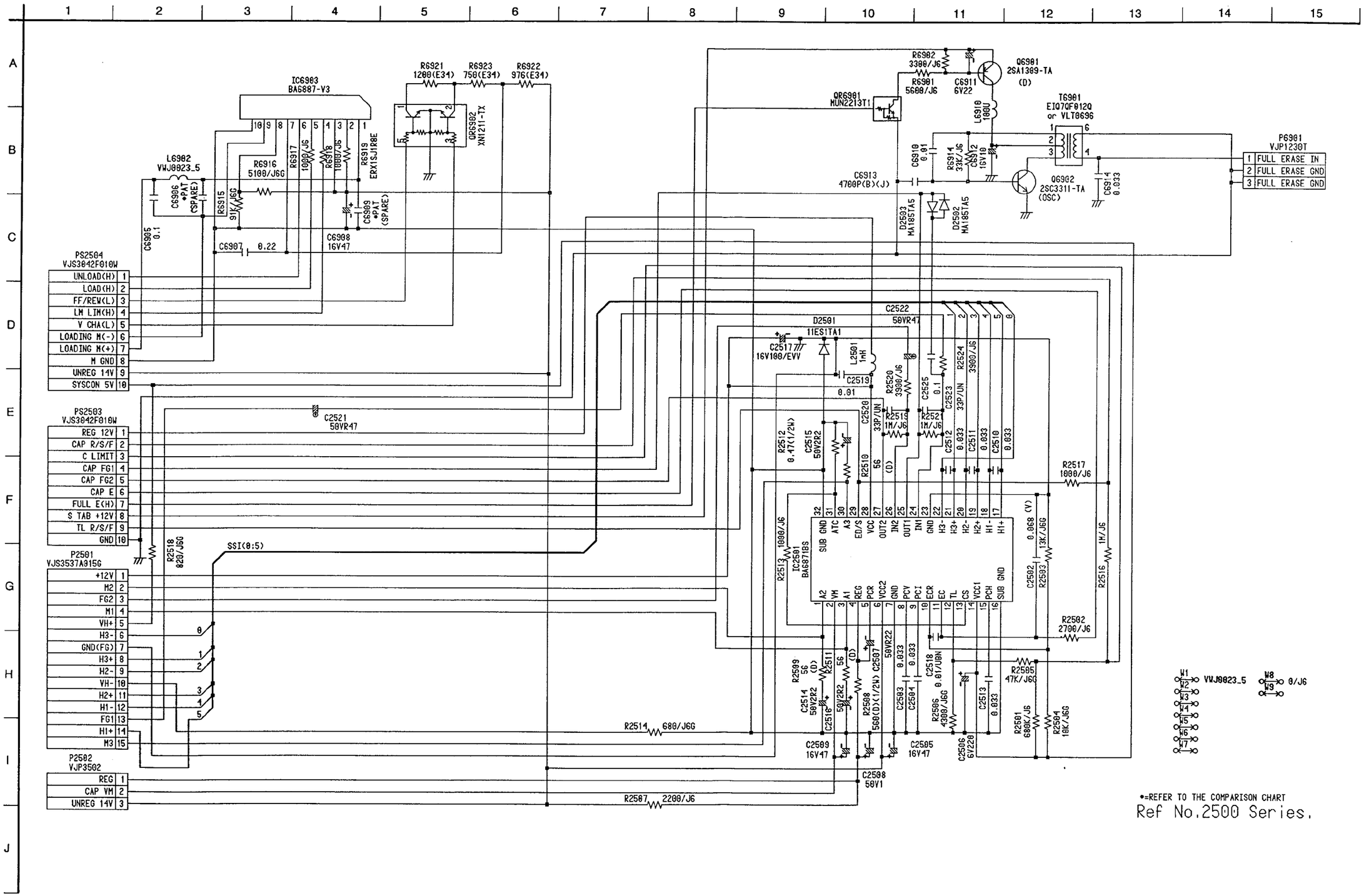
REF. NO. / MODE	IC2501												QR6901			QR6902				
	21	22	23	24	25	26	27	28	29	30	31	32	E	C	B	1	2	3	4	5
PLAY	2.2	2.2	0	—	6.0	6.1	6.1	12.0	0	3.1	0	0	0	2.1	0	0	0	4.9	0	4.9
REC	2.2	2.2	0	—	6.0	6.1	6.1	12.0	0	3.1	0	0	0	0	0.5	0	0	4.9	0.5	4.9

REF. NO. / MODE	IC6903										Q6901			Q6902						
	1	2	3	4	5	6	7	8	9	10	E	C	B	E	C	B				
PLAY	0.3	14.6	14.6	0	0	0	6.3	9.6	0.8	0	1.8	0.1	1.6	0	0.1	0.1				
REC	1.1	14.6	14.6	0	0	0	6.3	9.5	1.1	0	12.1	12.1	11.4	0	12.0	0.5				

■ IC2501 (BA6871BS)

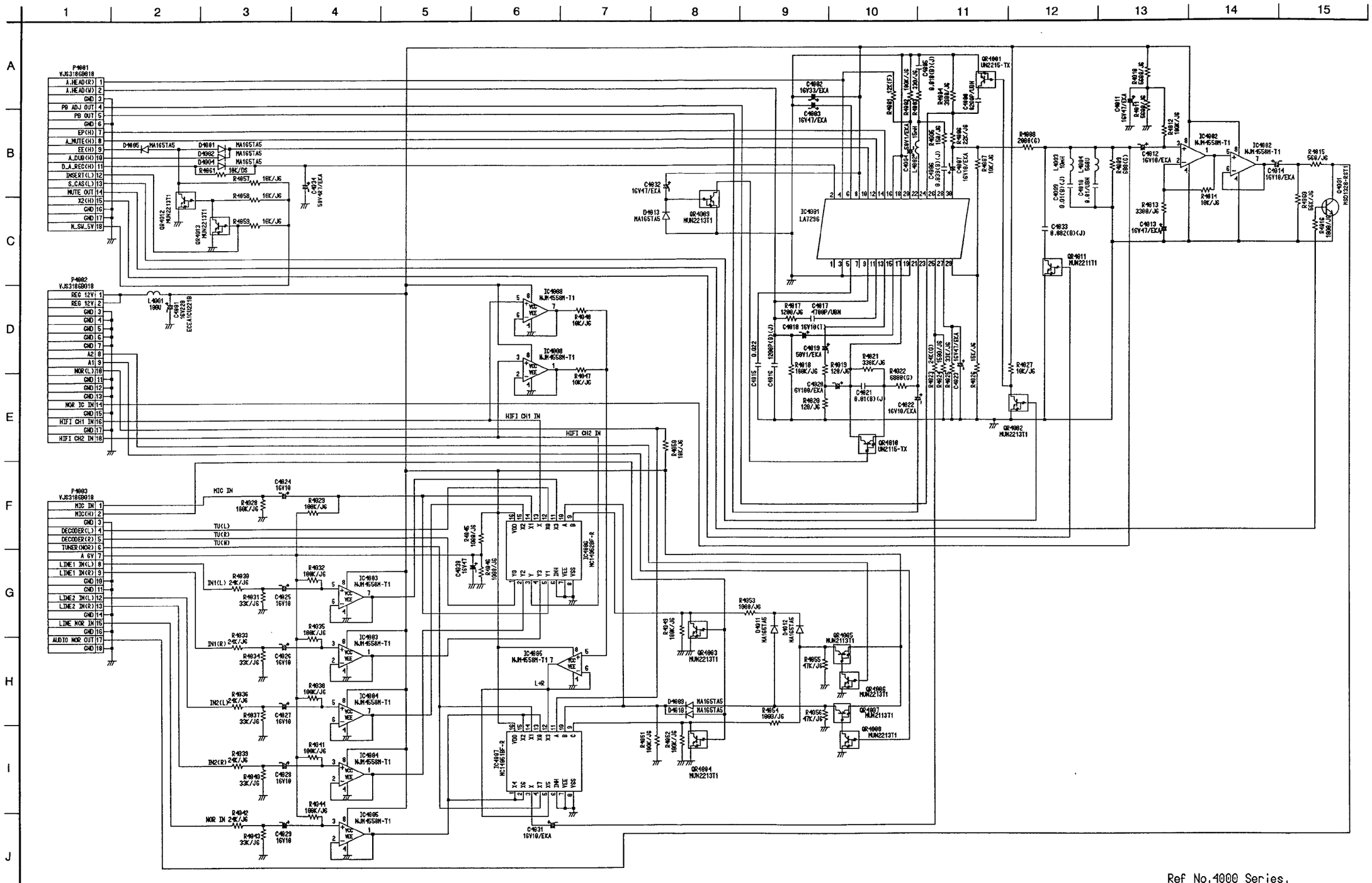


7-6. SUB SERVO SCHEMATIC DIAGRAM



SCM–12

7-7. AUDIO 1 SCHEMATIC DIAGRAM



SCM-13

SCM-13

AUDIO 1 (NORMAL) C.B.A.

REF. NO. / MODE	IC4001																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	1.3	0	0	0	8.1	9.2	0	12.2	0	0.3	0.6	0	0	0	2.0	0	0	0	0	4.1
REC	11.8	4.4	0	0	8.2	9.3	0	12.3	0	4.6	0	0	0	0	0.9	0	0.6	0	0	4.1

REF. NO. / MODE	IC4001									
	21	22	23	24	25	26	27	28	29	30
PLAY	4.1	1.1	0	0	0	0	0.3	0	0	3.7
REC	0.2	1.0	0	0	0	0	0	0	0	3.6

REF. NO. / MODE	IC4002								IC4003							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
PLAY	6.1	6.1	6.0	0	6.1	6.1	6.1	12.3	6.1	6.1	6.1	0	6.0	6.1	6.1	12.2
REC	6.1	6.1	6.0	0	6.1	6.1	6.1	12.3	6.1	6.1	6.0	0	6.0	6.1	6.1	12.3

REF. NO. / MODE	IC4004								IC4005							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
PLAY	6.1	6.1	6.0	0	6.0	6.0	6.0	12.2	6.1	6.1	6.0	0	6.1	6.1	6.1	12.2
REC	6.1	6.1	6.0	0	6.0	6.1	6.1	12.3	6.1	6.1	6.0	0	6.1	6.1	6.1	12.3

REF. NO. / MODE	IC4006															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PLAY	6.1	6.1	6.1	6.1	6.0	0	0	0	11.6	11.7	6.1	6.1	6.1	6.0	6.1	12.2
REC	6.1	6.1	6.1	6.1	6.0	0	0	0	11.7	11.8	6.1	6.1	6.1	6.0	6.1	12.3

REF. NO. / MODE	IC4007															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PLAY	6.1	6.1	6.1	6.1	6.1	0	0	0	0	11.7	0	6.1	6.1	6.1	6.1	12.2
REC	6.1	6.1	6.1	6.1	6.1	0	0	0	0	0	0	0	0	0	0	0

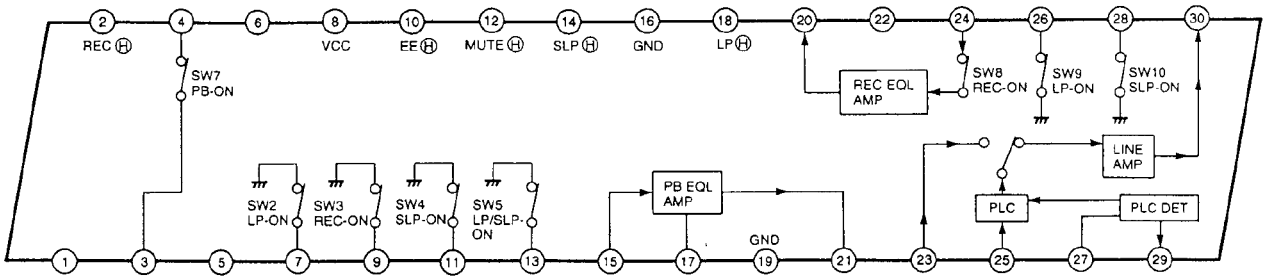
REF. NO. / MODE	IC4008								Q4001		
	1	2	3	4	5	6	7	8	E	C	B
PLAY	6.1	6.1	6.1	0	6.1	6.1	6.1	12.2	0	0	−1.0
REC	6.1	6.1	6.1	0	6.1	6.1	6.1	12.3	0	0	−0.3

REF. NO. / MODE	QR4001			QR4002			QR4003			QR4004			QR4005			QR4006		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
PLAY	0	0	0	0	0	4.1	0	11.6	0	0	0	0	12.2	0	12.1	0	12.1	0
REC	0	2.3	0	0	0	4.0	0	11.6	0	0	0	0	12.2	0	12.1	0	11.0	0

REF. NO. / MODE	QR4007			QR4008			QR4009			QR4010			QR4011			QR4012		
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
PLAY	12.2	12.2	0	0	0	3.7	0	2.1	0	2.3	2.2	2.1	0	0.1	0	0	0.4	0
REC	12.2	12.2	0	0	0	3.7	0	1.5	0	0.2	0.6	0.9	0	1.2	0	0	4.9	0

REF. NO. / MODE	QR4013		
	E	C	B
PLAY	0	0	3.4
REC	0	0	3.4

■ IC4001 (LA7296)



AUDIO 2 C.B.A.

REF. NO. / MODE	IC4501								IC4502								IC4503			
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	I	G	O	
PLAY	10.9	0	0	0	4.8	4.8	4.8	12.2	6.1	6.1	6.0	0	6.0	0.2	6.1	12.2	12.2	0	5.0	
REC	11.0	0	0	0	5.0	5.0	5.0	12.2	6.1	6.1	6.0	0	6.0	6.1	6.1	12.3	12.3	0	5.0	

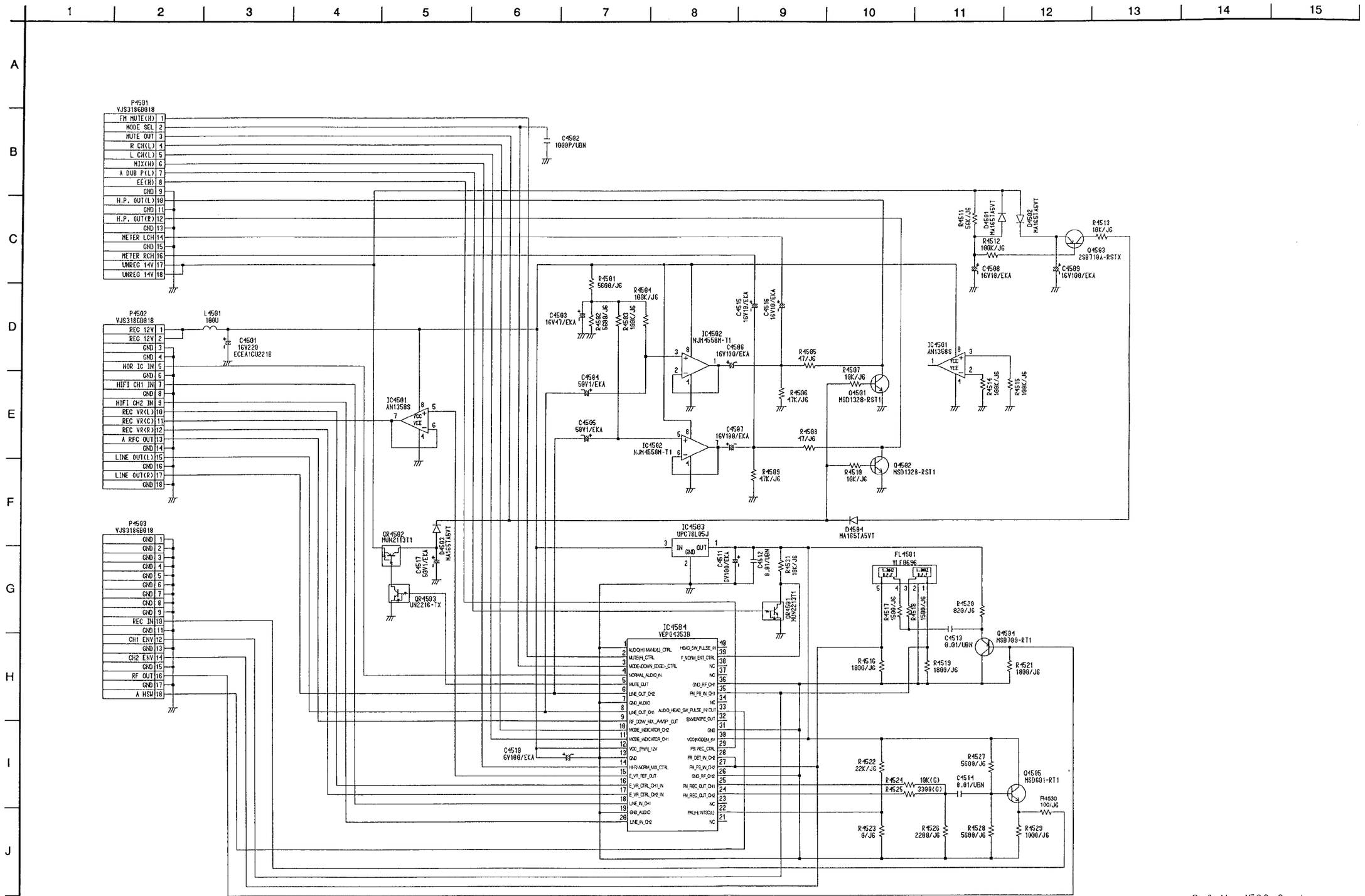
REF. NO. / MODE	IC4504																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0	5.0	0	–0.7	0	0	0	0	0.4	0.4	12.2	0	0	4.8	4.5	4.5	6.1	0	6.1
REC	0	0	5.0	0	–0.5	0	0	0	0	0.4	0.4	12.3	0	0	5.0	4.6	4.6	6.1	0	6.1

REF. NO. / MODE	IC4504																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	0.4	0	0.4	0	0	0	0	0	0	5.0	0	3.2	5.0	2.8	0	0	5.0	0.3	0	0
REC	1.1	0	1.0	0	0	0	0	0	4.9	5.0	0	0	0	1.5	0	0	5.0	0.8	0	0.4

REF. NO. / MODE	Q4501			Q4502			Q4503			Q4504			Q4505							
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B					
PLAY	0	0	0	0	0	0	14.5	–0.2	14.4	2.1	0	1.5	1.8	5.0	2.4					
REC	0	0	–0.5	0	0	–0.8	14.5	–0.7	14.4	3.5	0	2.9	1.8	5.0	2.4					

REF. NO. / MODE	QR4501			QR4502			QR4503													
	E	C	B	E	C	B	E	C	B											
PLAY	0	0	4.1	14.7	0.1	14.5	0	14.5	–0.7											
REC	0	0	4.1	14.6	0.3	14.5	0	14.5	–0.8											

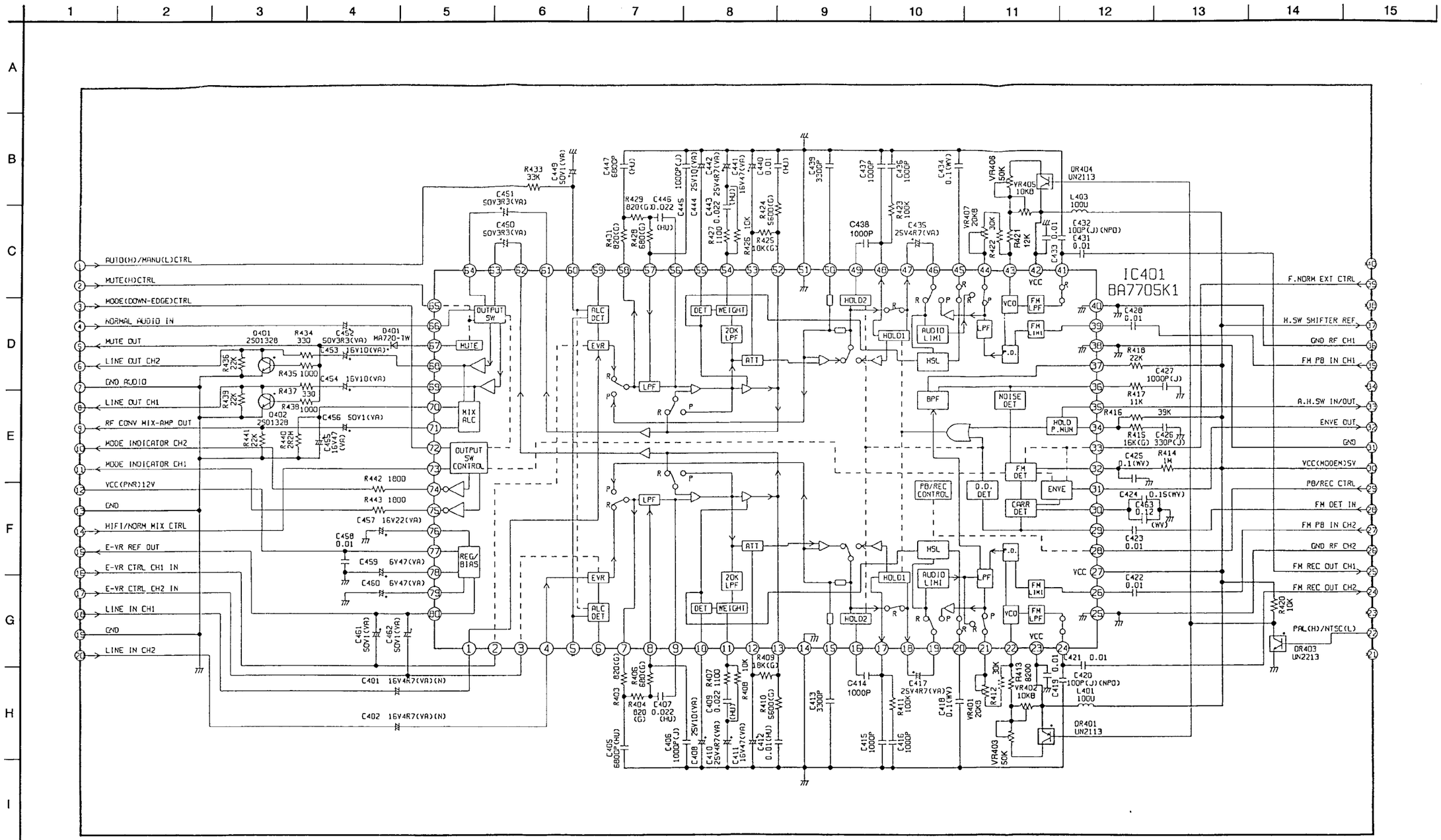
7-8. AUDIO 2 SCHEMATIC DIAGRAM



Ref No.1500 Series.

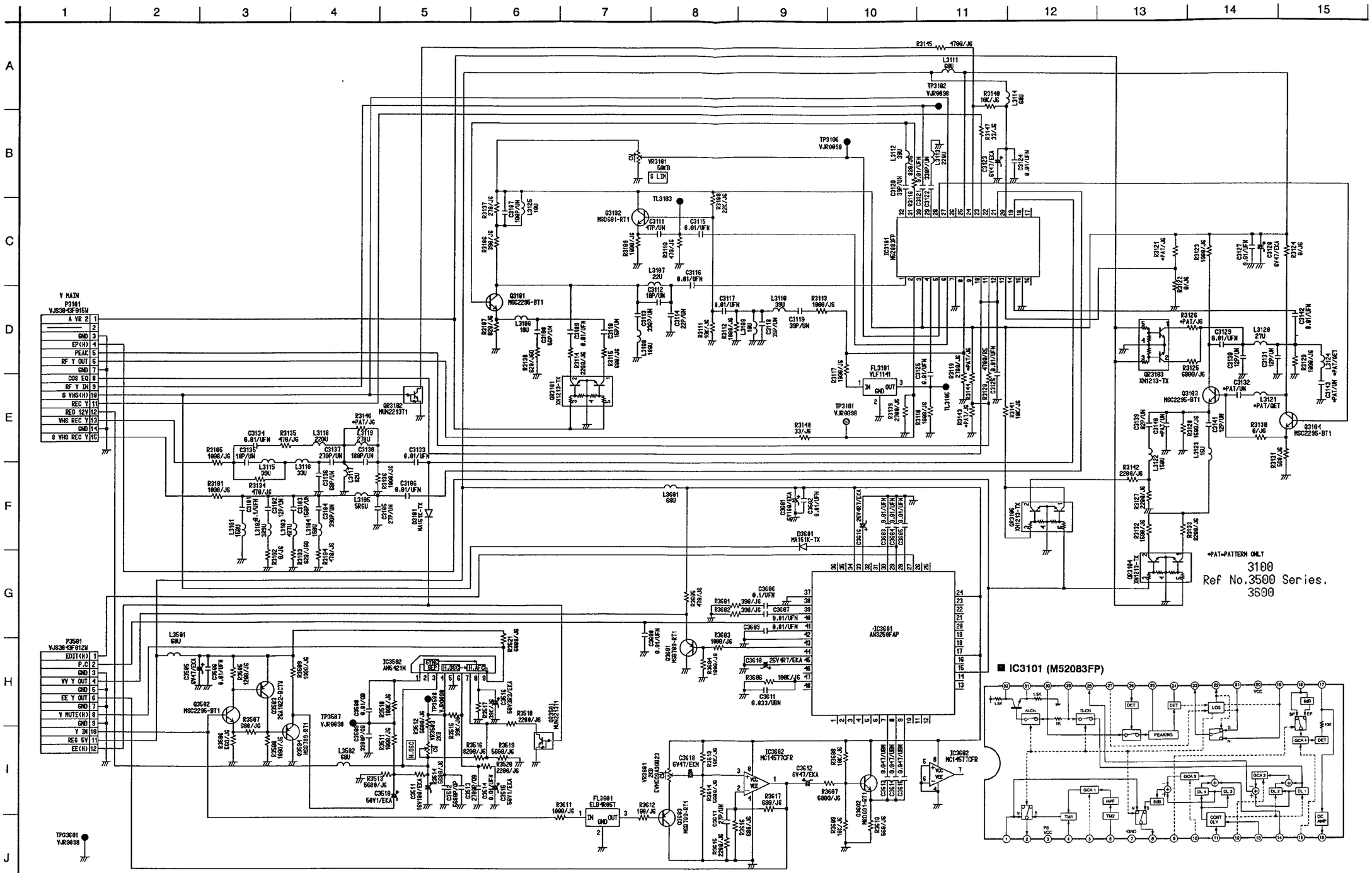
SCM–16

7-9. FM AUDIO PACK SCHEMATIC DIAGRAM



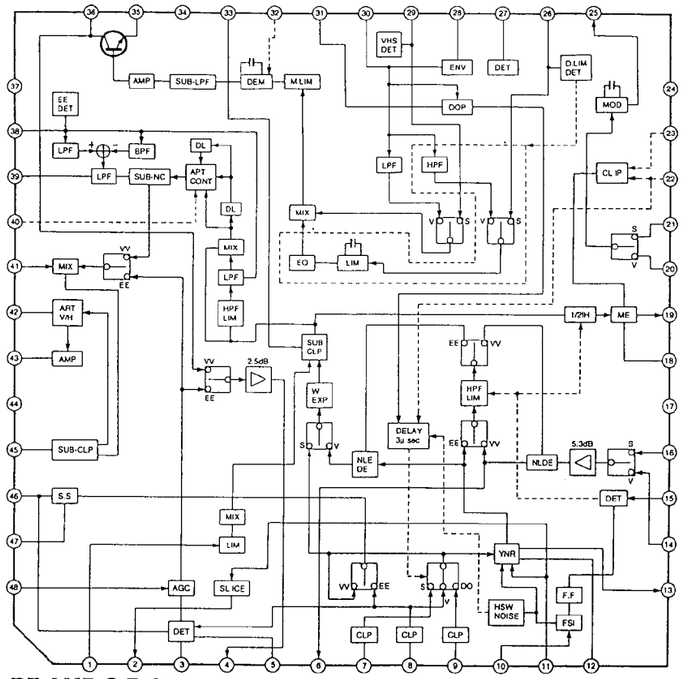
SCM–17

7-10. RF AMP SCHEMATIC DIAGRAM



SCM–18

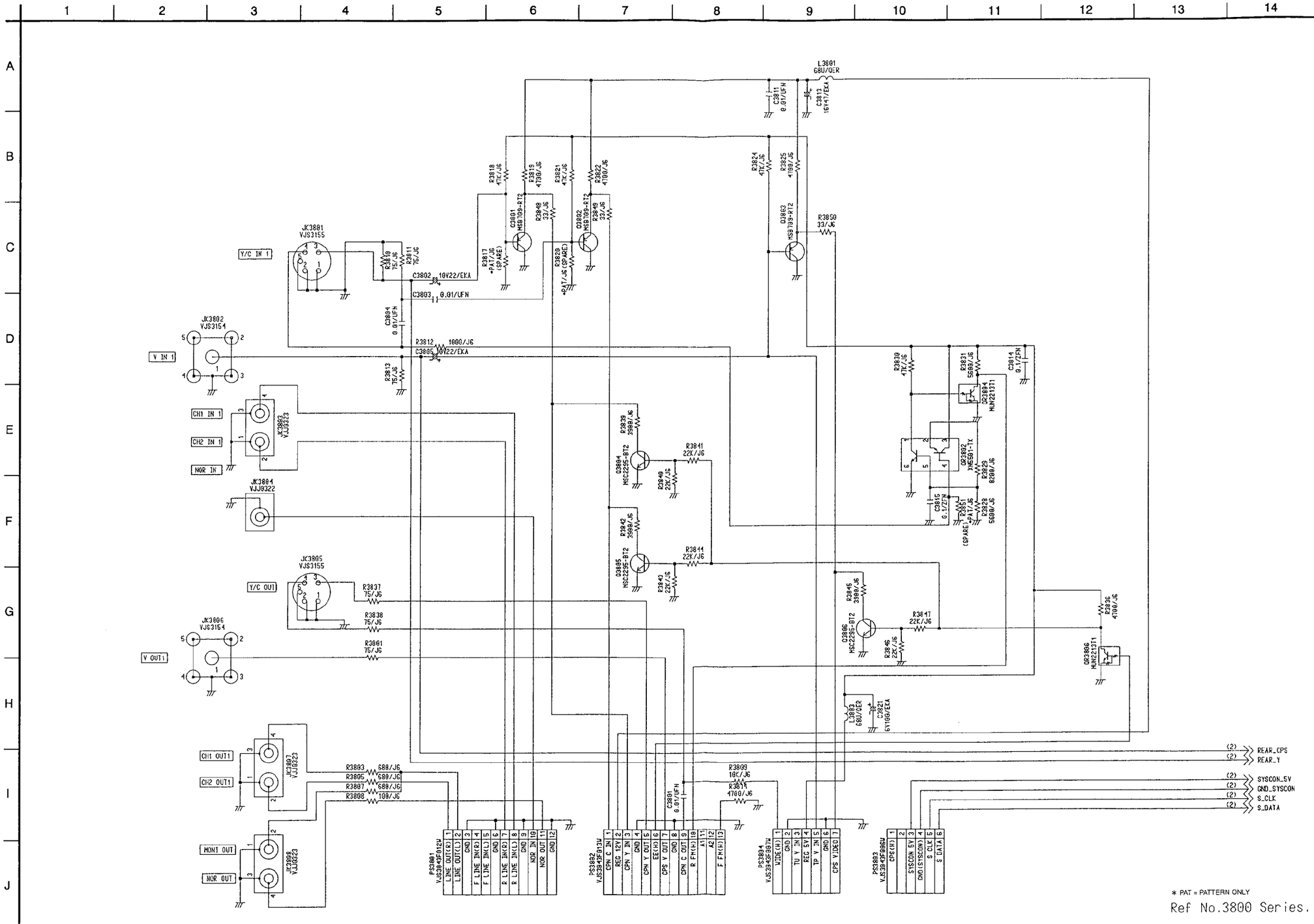
■ IC3601 (AN3250FAP)



RF AMP C.B.A.

REF. NO.	IC3101																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	3.6	2.0	4.8	2.9	0.9	2.6	0	2.0	1.3	1.2	2.7	1.2	0	3.6	0	0.3	2.9	2.8	0.4	4.9
REC	3.6	2.0	4.8	2.9	0.9	2.6	0	2.0	1.4	1.2	2.7	1.2	0	3.6	0	0.3	2.9	2.8	2.4	4.9
REF. NO.	IC3101																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
PLAY	2.4	0	0.1	4.9	4.8	1.0	0.1	2.5	2.6	3.4	1.4	3.2								
REC	2.4	0	1.7	4.9	4.8	1.0	0.1	2.5	2.7	3.4	1.4	3.2								
REF. NO.	IC3502																			
MODE	1	2	3	4	5	6	7	8	9											
PLAY	7.5	6.9	12.2	7.7	0	8.4	4.9	0.3	0											
REC	7.5	6.9	12.2	7.7	0	8.4	1.9	0.3	0											
REF. NO.	IC3601																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	1.8	2.4	2.1	0.7	0.3	2.7	2.1	2.1	2.1	2.2	2.6	1.9	1.4	1.9	0	1.8	4.6	0.8	0.8	0.7
REC	1.8	2.4	2.1	0.6	0.2	2.7	2.1	2.1	2.1	2.2	2.6	1.9	1.4	1.9	0	1.8	4.6	0.8	0.9	0.9
REF. NO.	IC3601																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	0.8	1.3	0.6	4.6	4.3	2.5	0	1.7	0.6	2.7	0	2.9	2.6	4.6	1.2	1.2	0	1.2	1.9	2.7
REC	0.8	1.3	0.6	4.6	4.3	2.5	0	1.7	0.6	2.7	0	3.1	2.6	4.6	1.3	1.2	0	1.2	1.9	2.7
REF. NO.	IC3601								IC3602											
MODE	41	42	43	44	45	46	47	48	1	2	3	4	5	6	7	8				
PLAY	3.0	0	2.4	0	2.4	0.2	2.3	3.0	3.2	1.6	1.6	0	0	0	2.6	4.6				
REC	3.0	0	2.5	0	2.3	0.2	2.3	3.0	3.2	1.6	1.6	0	0	0	2.6	4.6				
REF. NO.	Q3101			Q3102			Q3103			Q3104			Q3502			Q3503				
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	0.7	4.4	1.4	0.8	4.8	1.4	1.0	4.0	1.8	1.8	4.8	2.5	1.3	4.2	2.0	4.9	2.5	4.2		
REC	0.7	4.4	1.4	0.8	4.8	1.4	1.1	4.0	1.8	1.8	4.8	2.5	1.3	4.2	2.0	4.9	2.5	4.2		
REF. NO.	Q3504			Q3601			Q3602			Q3603			QR3101					QR3102		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	1	2	3	4	5	E	C	B
PLAY	3.2	0	2.5	1.8	0	1.2	1.6	4.6	2.2	2.6	0	2.0	0.1	0	0	0	0	0	4.9	0.1
REC	3.2	0	2.5	1.9	0	1.2	1.6	4.6	2.2	2.6	0	2.0	0.4	0	0	0	0	0	4.9	0.1
REF. NO.	QR3103					QR3104					QR3105					QR3501				
MODE	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	E	C	B		
PLAY	0.6	0	0	0	0	0.1	0.1	0	0.2	0	0.2	0	4.1	0	0	0	4.9	0		
REC	0.4	0	0	0	0	0.4	0.5	0	0	0	4.1	0	4.1	0	0	0	0	4.8		

7-11. I/O PACK (1/2) SCHEMATIC DIAGRAM



* PAT = PATTERN ONLY

Ref No.3800 Series.

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I/O PACK C.B.A.

REF. NO.	IC3871																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0	0	4.7	0	0	5.1	0	0	0	0	0	0	0	5.1	0	0	5.1	5.1	0
REC	0	0	0	4.7	0	0	5.1	0	0	0	0	0	0	0	0	0	0	5.1	5.1	0

REF. NO.	IC3871																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	0	0	0	5.1	5.1	5.1	0	5.1	2.2	2.3	2.5	0	0	0	0	0	0	0	0	0
REC	0	0	0	5.1	5.1	5.1	0	5.1	2.2	2.3	2.5	0	0	0	0	0	0	0	0	0

REF. NO.	IC3871																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REC	0	0	0	0	0	0.1	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0	0	0

REF. NO.	IC3871																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	5.0	5.0	0	0	0	4.6	4.6	0	5.0	5.1	5.0	0	0	0	4.2	0	0	0	0	0
REC	5.0	5.0	0	0	0	4.6	4.6	0	5.0	5.1	5.0	0	0	0	4.2	0	0	0	0	0

REF. NO.	IC3872																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
PLAY	3.1	5.1	5.1	0	0.1	2.5	5.1	3.1	3.5	2.5	5.1	0	5.1	5.1						
REC	0	0.1	5.1	0.4	0.1	2.5	0.3	0	0.4	2.5	0.7	0	0	0.7						

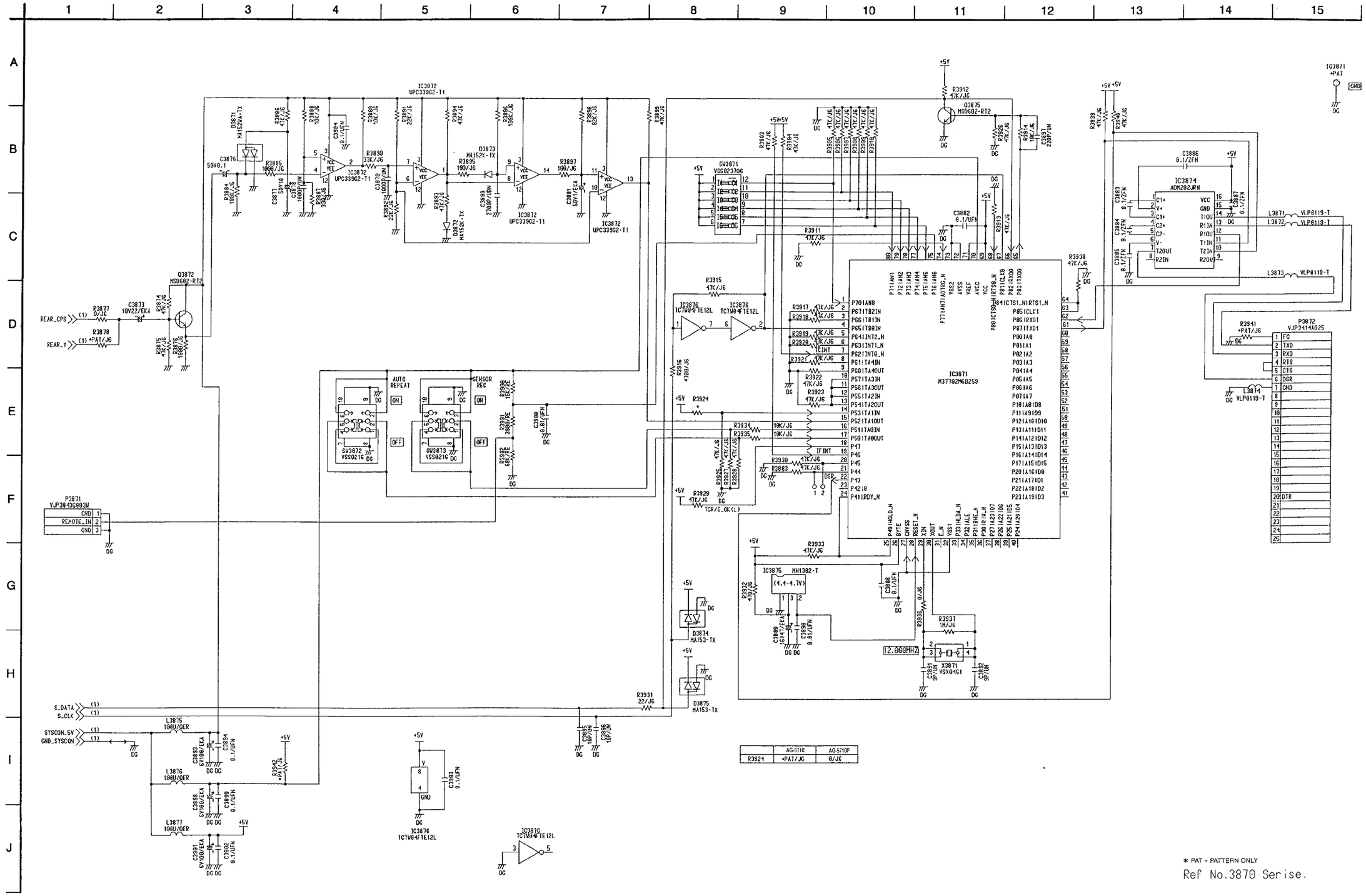
REF. NO.	IC3874																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	7.5	10.2	2.4	4.9	-4.8	-10.2	9.7	0	5.0	0	5.0	5.0	0	-9.4	0	5.0				
REC	7.5	10.0	2.4	4.9	-4.8	-9.9	9.5	0	5.0	0	5.0	5.0	0	-9.4	0	5.0				

REF. NO.	IC3875																			
MODE	1	2	3																	
PLAY	0	5.0	5.0																	
REC	0	5.0	5.0																	

REF. NO.	Q3801			Q3802			Q3803			Q3804			Q3805			Q3806				
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	5.8	0	5.1	5.5	0	4.9	5.8	0	4.9	0	0	0.6	0	0	0.6	0	0	0.6		
REC	5.8	0	5.1	5.8	0	5.2	5.8	0	5.2	0	5.8	0	0	5.8	0	0	5.8	0		

REF. NO.	Q3872			Q3875			QR3802						QR3804			QR3806				
MODE	E	C	B	E	C	B	1	2	3	4	5	6	E	C	B	E	C	B		
PLAY	1.7	5.1	2.3	0	4.5	0	2.5	0	4.9	0	0	0	0	0	2.5	0	3.3	0		
REC	1.7	5.1	2.3	0	4.5	0	2.5	0	4.9	0	0	0	0	0	2.5	0	0	4.9		

7-12. I/O PACK (2/2) SCHEMATIC DIAGRAM



* PAT = PATTERN ONLY

Ref No.3870 Serise.

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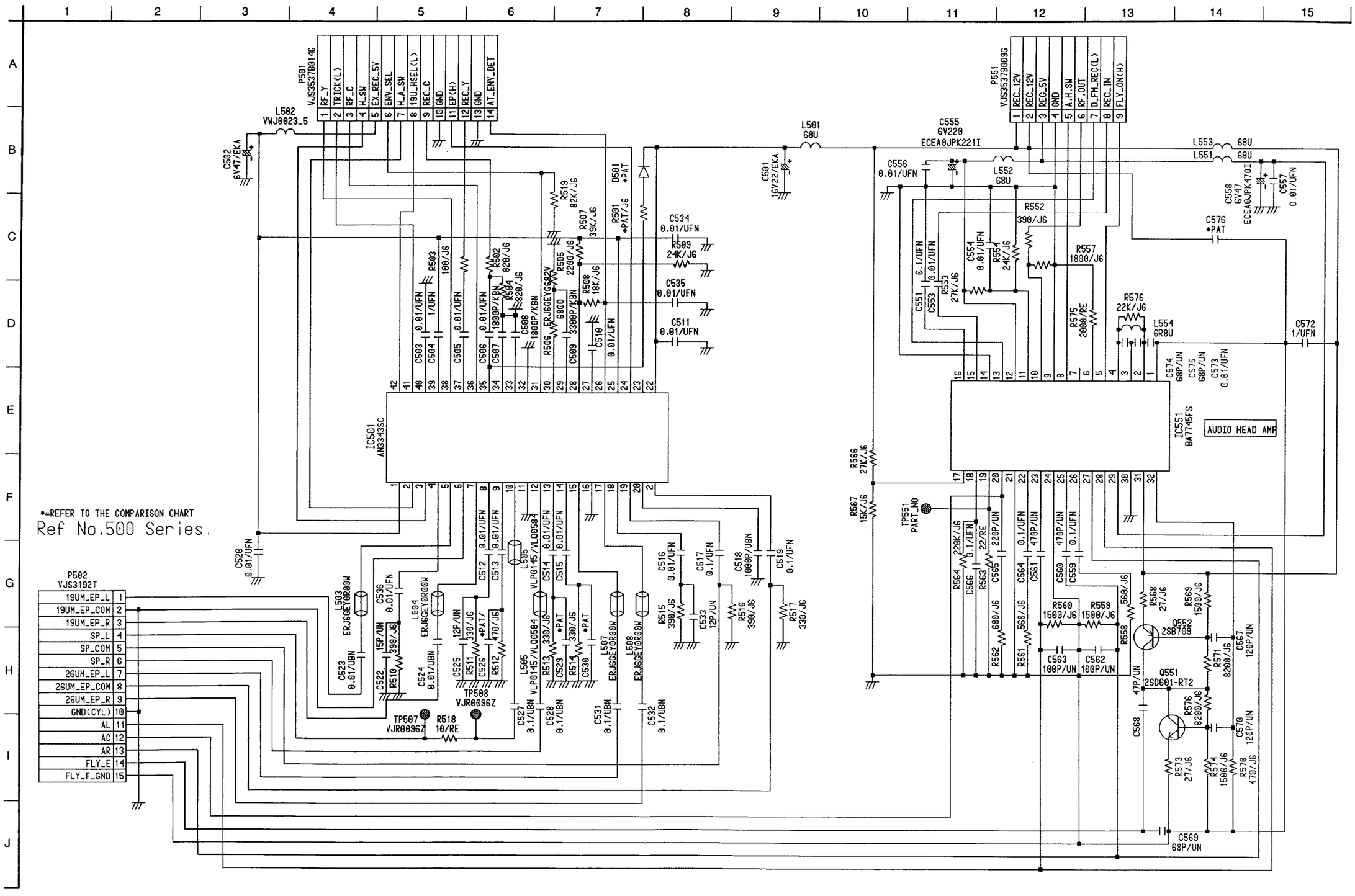
7-13. HEAD AMP SCHEMATIC DIAGRAM



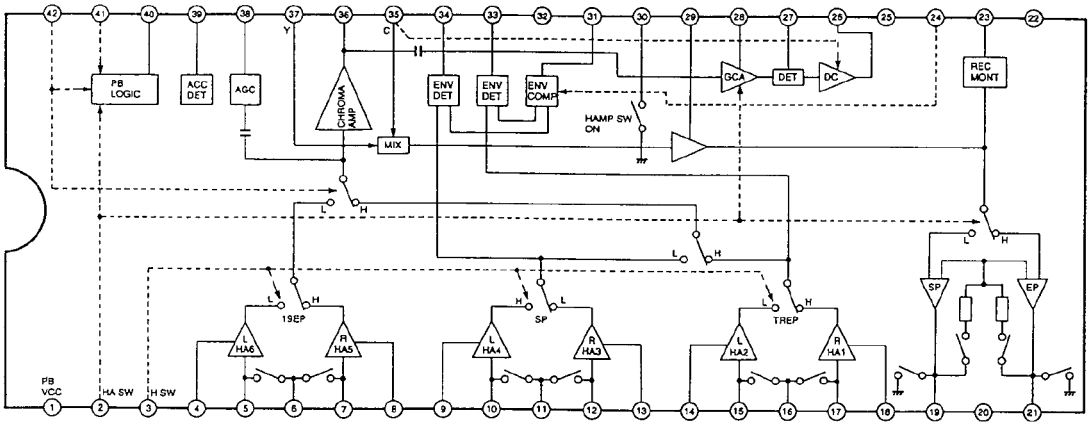
SCM–21

SCM–21

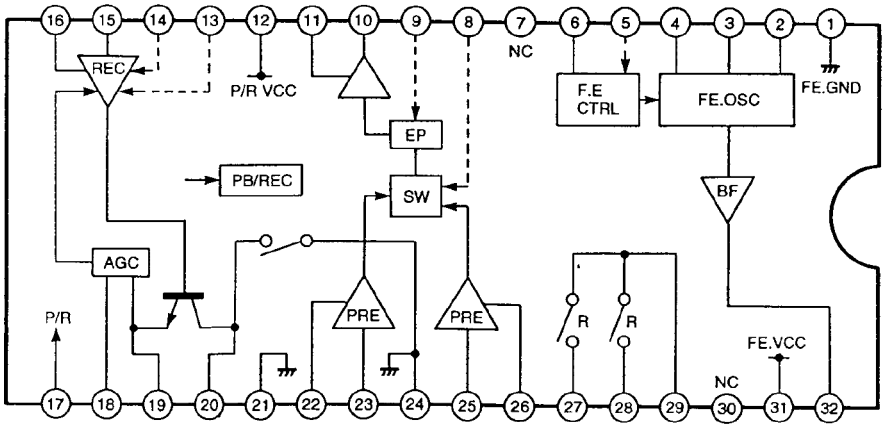
HEAD AMP C.B.A.

REF. NO. / MODE	IC501																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	5.1	0.5	2.7	2.0	0	0	0	2.0	1.3	0.5	0	0.5	1.3	2.0	0	0	0	2.0	0	0
REC	0.3	4.1	4.9	0.1	0	0	0	1.0	0.1	0	0	0	0.1	0.1	0	0	0	0.1	6.2	6.0
REF. NO. / MODE	IC501																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	0	0	0	0	5.1	3.4	3.0	2.6	0	0	5.0	0	2.4	2.9	2.7	1.9	2.7	2.5	3.3	4.2
REC	6.0	11.9	8.1	4.6	0.3	0.1	0.5	0.1	3.1	0	0	0	0.2	0.2	3.9	0	3.9	0.6	0.4	0.4
REF. NO. / MODE	IC501																			
	41	42																		
PLAY	4.8	5.1																		
REC	4.8	5.1																		
REF. NO. / MODE	IC551																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0	0	0	0	0	0	5.0	0	2.5	2.3	5.0	4.9	0	2.9	0.4	0.2	0	0	0
REC	0	6.0	3.3	6.0	0	1.0	0.8	0	0	3.7	2.3	5.0	0	0	2.8	1.3	4.3	0.5	0.5	4.1
REF. NO. / MODE	IC501												Q551			Q552				
	21	22	23	24	25	26	27	28	29	30	31	32	E	C	B	E	C	B		
PLAY	0	0.7	0.6	0	0.6	0.7	0	0	5.1	0	0	0	0	0	0	0	0	0		
REC	0	0	0	0	0	0	4.2	4.2	5.0	0	11.9	0.9	0.2	5.6	0.8	11.7	5.8	11.0		

■ IC501 (AN3343SC)



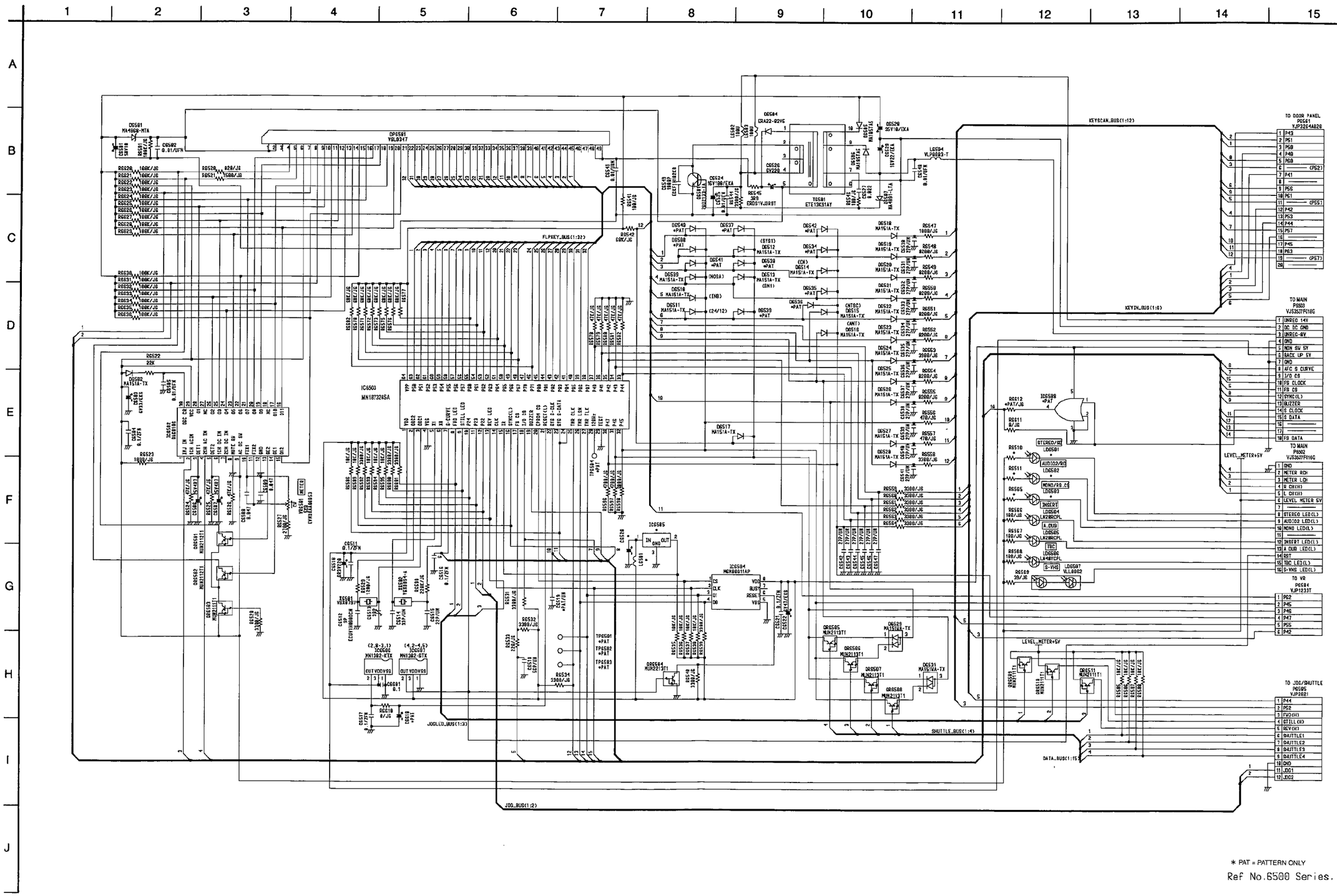
■ IC551 (BA7745FS)



TIMER C.B.A.

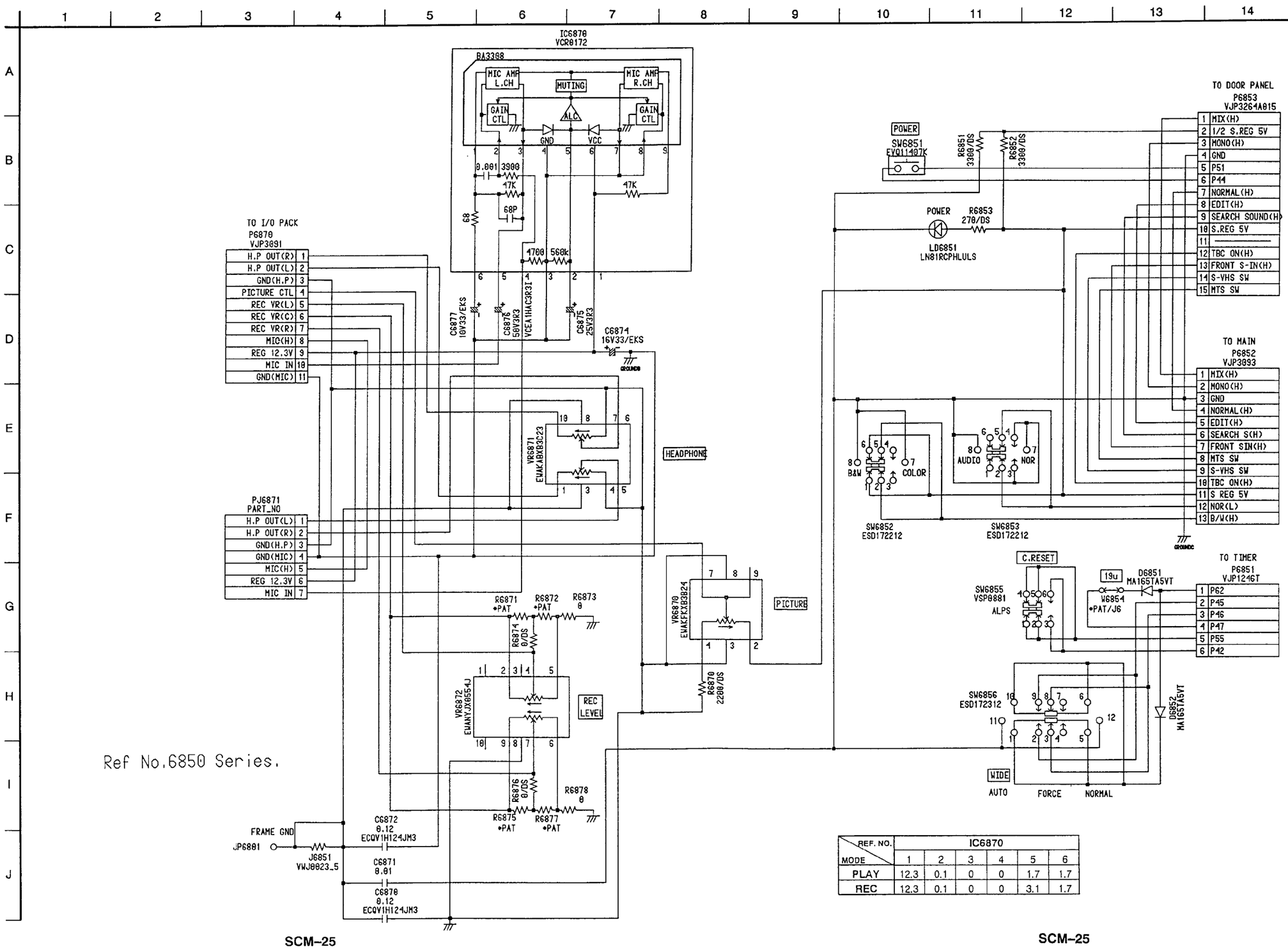
REF. NO. / MODE	IC6502																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0.7	1.7	0	1.7	0	0	0	0	5.0	2.2	1.3	0	4.3	4.2	−26.5	−26.5	−26.5	1.8	−26.5	−26.5
REF. NO. / MODE	IC6502																			
	21	22	23	24	25	26	27	28	29	30										
STOP	−26.5	−26.5	−26.5	−26.5	−26.5	−26.5	2.0	−26.5	5.0	3.1										
REF. NO. / MODE	IC6503																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	5.1	1.9	1.9	0	2.1	2.5	4.2	5.1	5.1	5.1	5.1	5.1	5.1	4.8	5.1	0	0.3	5.0	4.9	5.0
REF. NO. / MODE	IC6503																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	5.1	4.2	4.6	4.6	4.9	5.1	4.1	2.6	0	2.7	2.4	2.3	0	0	0	0	0	−23.5	−23.5	−23.5
REF. NO. / MODE	IC6503																			
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	−23.5	−23.5	−23.5	−23.5	−23.5	−23.7	1.2	−23.1	−14.0	−13.5	−14.0	−20.2	−14.6	−14.6	−14.4	−22.8	−17.6	−14.1	−22.9	−17.7
REF. NO.	IC6503				IC6504								IC6505			IC6506				
MODE	61	62	63	64	1	2	3	4	5	6	7	8	1	2	3	O	G	V		
STOP	−16.0	−14.8	−14.7	−26.5	5.0	4.8	4.1	5.1	0	0	5.1	5.1	5.1	5.1	0	5.1	0	5.1		
REF. NO.	IC6507			Q6501																
MODE	O	G	V	E	C	B														
STOP	5.1	0	5.1	0	14.2	−0.9														
REF. NO.	QR6501			QR6502			QR6503			QR6504			QR6505			QR6506				
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
STOP	5.0	−24.0	4.4	4.9	−24.0	4.2	5.0	4.9	1.2	0	0	5.1	5.0	2.4	5.0	5.0	2.3	5.0		
REF. NO.	QR6507			QR6508			QR6509			QR6510			QR6511							
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B					
STOP	5.0	2.2	5.0	5.0	2.3	5.0	5.0	2.2	5.1	5.0	2.2	5.1	5.0	2.2	5.1					

7-14. TIMER SCHEMATIC DIAGRAM



SCM–24

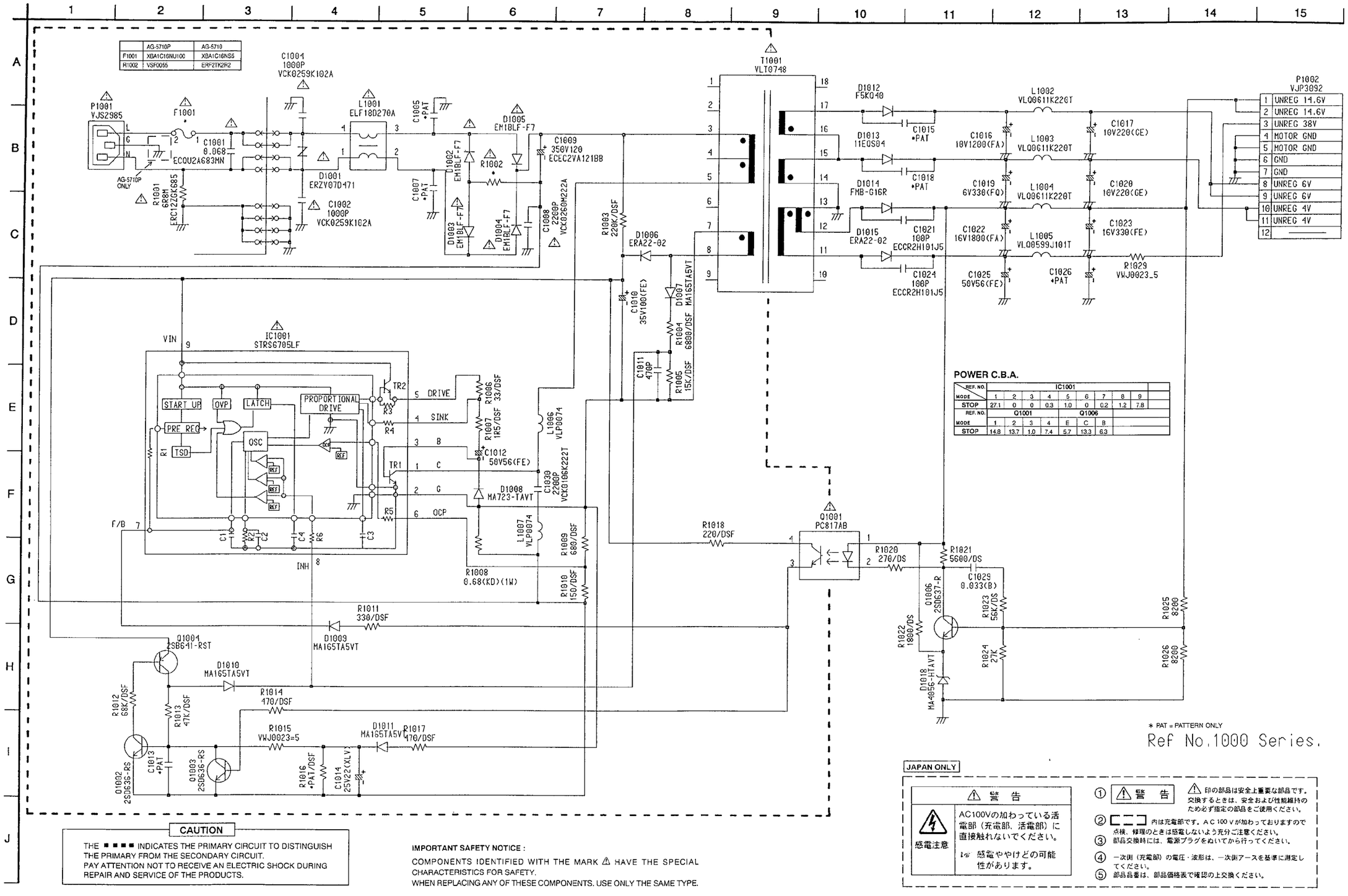
7-15. VR SCHEMATIC DIAGRAM



REF. NO. / MODE	IC6870					
	1	2	3	4	5	6
PLAY	12.3	0.1	0	0	1.7	1.7
REC	12.3	0.1	0	0	3.1	1.7

SCM-25

7-16. POWER SCHEMATIC DIAGRAM



POWER C.B.A.

REF. NO.	IC1001								
MODE	1	2	3	4	5	6	7	8	9
STOP	27.1	0	0	0.3	1.0	0	0.2	1.2	7.8

REF. NO.	Q1001				Q1006			
MODE	1	2	3	4	E	C	B	
STOP	14.8	13.7	1.0	7.4	5.7	13.3	6.3	

* PAT = PATTERN ONLY

Ref No.1000 Series.

CAUTION

THE ■ ■ ■ ■ INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

IMPORTANT SAFETY NOTICE :

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS. USE ONLY THE SAME TYPE.

JAPAN ONLY

⚠ 警 告

感電注意

AC100Vの加わっている活電部（充電部、活電部）に直接触れないでください。

火 感電ややけどの可能性があります。

① ⚠警 告 ⚠印の部品は安全上重要な部品です。交換するときは、安全および性能維持のため必ず指定の部品をご使用ください。

② □□□ 内は充電部です。AC 100 Vが加わっておりますので点検、修理のときは感電しないよう充分ご注意ください。

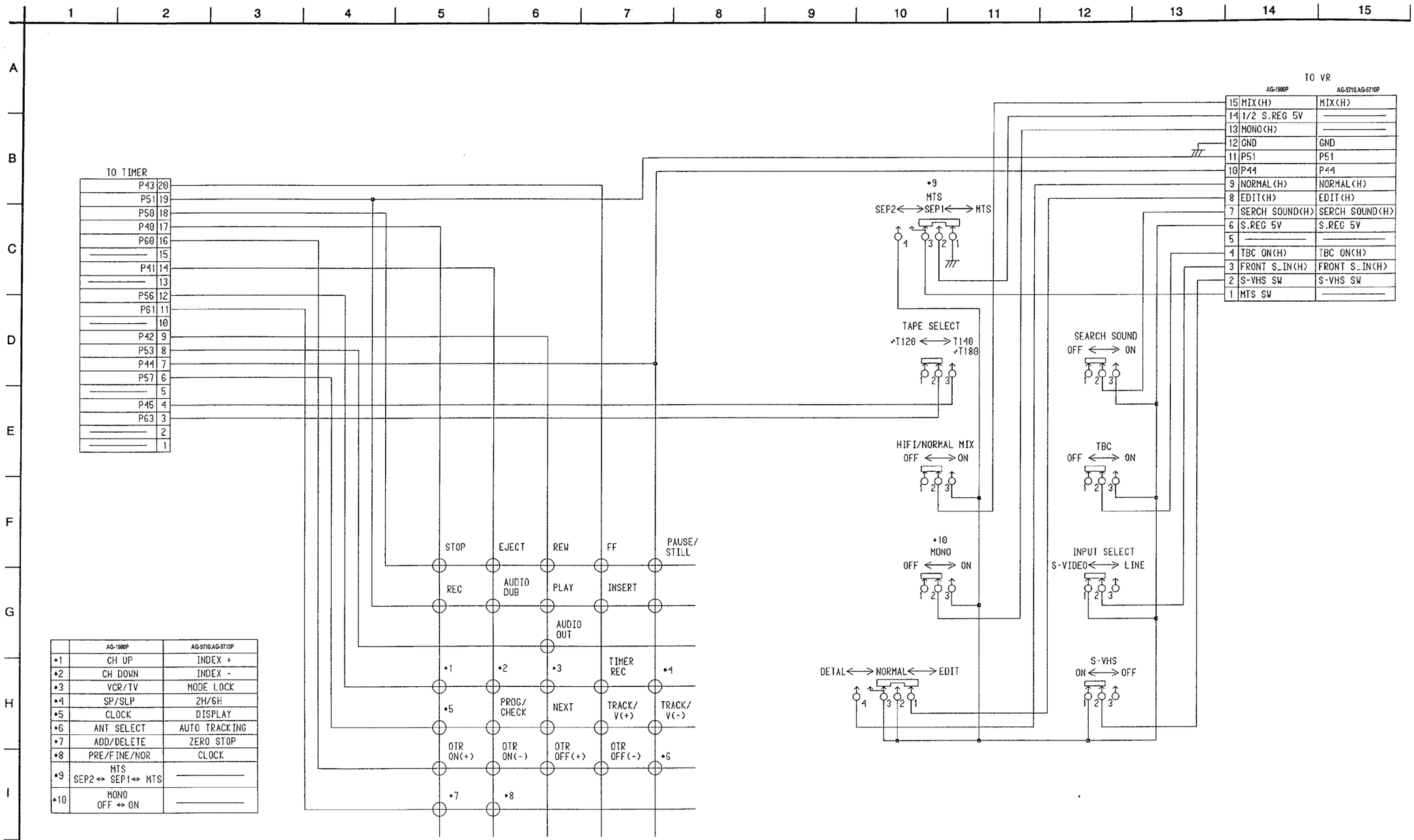
③ 部品交換時には、電源プラグをぬいてから行ってください。

④ 一次側（充電部）の電圧・波形は、一次側アースを基準に測定してください。

⑤ 部品品番は、部品価格表で確認の上交換ください。

SCM–26

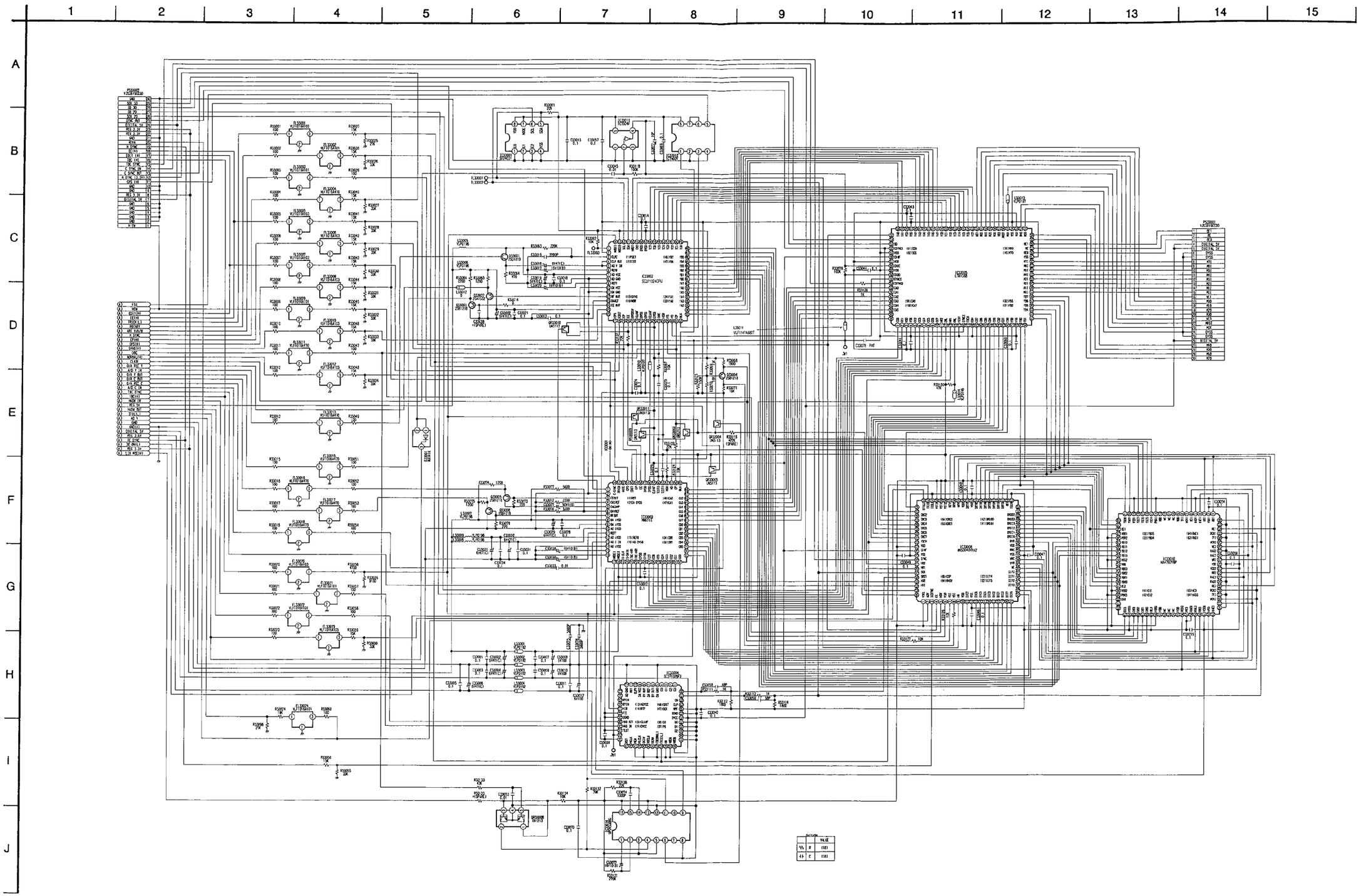
7-17. DOOR PANEL SCHEMATIC DIAGRAM



	AG-1980P	AG-5710,AG-5710P
•1	CH UP	INDEX +
•2	CH DOWN	INDEX -
•3	VCR/TV	MODE LOCK
•4	SP/SLP	2H/6H
•5	CLOCK	DISPLAY
•6	ANT SELECT	AUTO TRACKING
•7	ADD/DELETE	ZERO STOP
•8	PRE/FINE/NOR	CLOCK
•9	MTS SEP2 ↔ SEP1 ↔ MTS	———
•10	MONO OFF ↔ ON	———

SCM–27

7-18. DIGITAL Y/C SCHEMATIC DIAGRAM



SCM–28

DIGITAL Y/C C.B.A.

REF. NO. / MODE	IC33001																			
	1	2	3	4	5	6	7	8												
PLAY	0	0	0	0	1.8	1.6	3.3	3.3												
REF. NO. / MODE	IC33002																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	3.3	0	2.6	1.7	1.7	0.4	5.1	0	3.5	5.1	0	1.2	1.5	0.8	0.1	2.8	3.4	0	0	0
REF. NO. / MODE	IC33002																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	5.2	1.9	0	0	1.6	3.3	3.0	3.3	0	0	0	2.8	1.6	1.6	1.6	1.4	0.9	1.2	1.7	1.2
REF. NO. / MODE	IC33002																			
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	1.6	1.6	1.6	1.3	0.8	1.1	1.8	1.2	1.7	1.8	1.7	1.4	0.9	1.1	0	1.2	3.3	0	0	0
REF. NO. / MODE	IC33002																			
	61	62	63	64																
PLAY	1.8	0	3.3	0.1																
REF. NO. / MODE	IC33003																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	3.3	0	0.4	1.1	2.4	1.1	0.4	3.3	0	3.3	2.4	3.3	1.6	0	0.6	0	0.1	3.3	0	0
REF. NO. / MODE	IC33003																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	3.2	3.2	3.3	0	2.2	1.2	1.1	1.3	1.3	1.2	1.3	1.3	2.0	0.8	1.0	1.1	1.2	1.1	1.1	1.3
REF. NO. / MODE	IC33003																			
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	1.2	1.7	1.1	0.9	1.4	1.6	1.7	1.6	2.9	0	3.0	3.2	0	0	—	0	—	0	0	3.3
REF. NO. / MODE	IC33003																			
	61	62	63	64																
PLAY	3.4	3.3	3.1	3.1																
REF. NO. / MODE	IC33004																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0	0.1	0.1	0.1	0	0	0	0	0	0	0	0	0.2	0	0.2	0.3	3.2	0	0	0
REF. NO. / MODE	IC33004																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	0	0	1.7	5.1	3.9	2.0	0	2.0	0	0	0.1	0	3.1	0	0	5.2	0	0	0	0
REF. NO. / MODE	IC33004																			
	41	42	43	44	45	46	47	48												
PLAY	0	5.1	0	0	0	0.7	1.8	3.3												
REF. NO. / MODE	IC33005																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	1.3	1.0	3.2	0	1.2	1.2	1.2	1.1	1.1	2.1	2.5	3.2	3.2	0	0	0	0	0	2.1	1.0
REF. NO. / MODE	IC33005																			
	21	22	23 ~ 44		45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	1.0	1.2	—		0	1.8	1.5	1.4	1.4	0	1.2	0.8	3.2	0	2.0	3.3	3.8	1.2	1.4	1.3
REF. NO. / MODE	IC33005																			
	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	1.5	3.8	1.2	1.7	1.2	0.8	1.4	1.7	1.7	1.6	1.1	1.7	1.1	0.9	1.4	1.7	0	3.2	1.5	1.6
REF. NO. / MODE	IC33005																			
	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
PLAY	0	0	0	0	0	1.6	3.2	1.7	0	1.9	0	0	1.6	1.5	1.6	1.4	0.8	1.1	1.7	1.2
REF. NO. / MODE	IC33006																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	3.2	0	0	0	3.3	0	0.4	0	0	3.2	2.0	0	1.0	0.9	0.1	1.1	1.1	0.1	1.6	1.2
REF. NO. / MODE	IC33006																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	1.9	1.0	0.1	1.3	0	1.6	1.5	0	3.3	3.2	0	3.2	3.3	3.3	1.6	1.5	1.4	1.8	1.7	1.2
REF. NO. / MODE	IC33006																			
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	1.1	1.3	0	3.2	1.6	1.6	1.6	1.3	0.7	1.0	1.8	0	1.2	3.2	3.2	3.3	0.4	3.3	3.2	3.3
REF. NO. / MODE	IC33006																			
	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	0	3.1	3.3	1.3	1.1	1.2	1.2	1.2	1.1	1.1	2.1	0.1	3.3	1.6	0	0	3.2	3.2	1.4	2.1

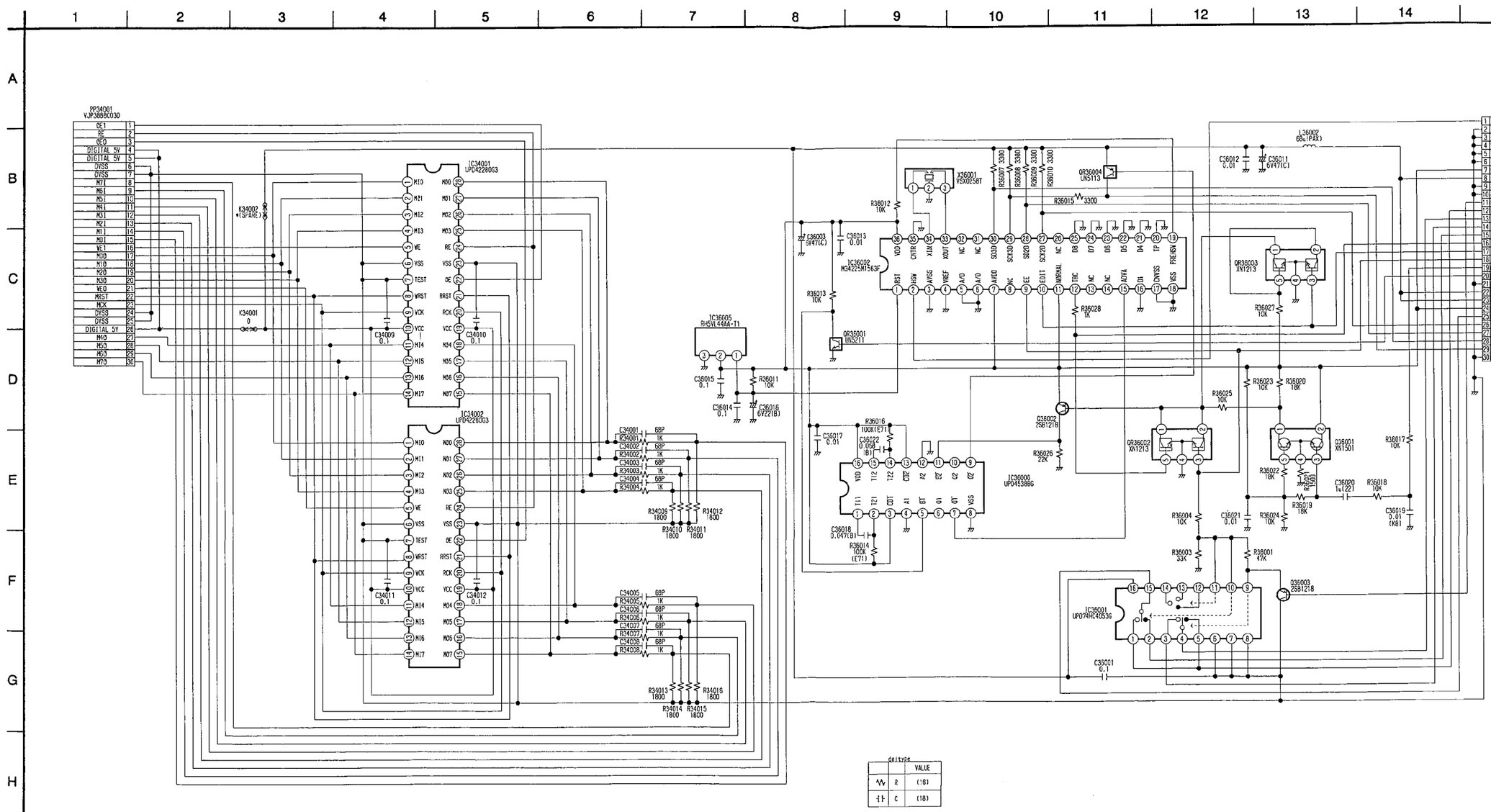
DIGITAL Y/C C.B.A.

REF. NO. / MODE	IC33006																			
	81	82	83	84																
PLAY	3.2	3.1	3.2	3.3																
REF. NO. / MODE	IC33010																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	3.2	3.7	3.2	3.2	0	0	0.1	0	0	0.4	0.4	0.4	0	0	0.8	1.0	1.8	1.2	0	1.2
REF. NO. / MODE	IC33010																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	1.8	1.0	0.8	3.2	3.2	0	1.5	1.5	1.6	1.3	0	0	1.4	1.6	1.6	1.6	3.2	3.3	0	1.3
REF. NO. / MODE	IC33010																			
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	1.2	1.2	1.7	0	1.8	1.5	1.5	1.6	0	0.4	-0.8	0.5	0.6	0.6	-0.8	1.6	0	0	3.3	3.2
REF. NO. / MODE	IC33010																			
	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	3.7	3.3	3.3	0	0	1.7	0	1.7	0.4	0	3.2	3.2	3.7	-0.8	3.2	-0.8	0	0	1.4	0
REF. NO. / MODE	IC33010				IC33011					IC33012										
	81	82	83	84	1	2	3	4	5	1	2	3	4	5	6	7	8			
PLAY	1.6	0	0	3.2	0	1.5	0	1.8	3.3	2.9	0	2.8	0	0.1	0.3	0.3	0			
REF. NO. / MODE	IC33014																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	0	3.2	3.2	0.1	3.2	0	3.2	0	3.3	0	0.1	0	3.2	3.2	0	3.3				
REF. NO. / MODE	Q33001			Q33002			Q33003			Q33004			Q33005			Q33006				
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	2.1	5.1	2.7	1.9	0	1.2	1.4	0	0.8	0.7	0	3.0	1.0	0	0.4	1.0	0	0.4		
REF. NO. / MODE	Q33007			QR33003			QR33004			QR33005			QR33008							
	E	C	B	E	C	B	E	C	B	E	C	B	1	2	3	4	5			
PLAY	0	0	3.4	0	0	3.2	3.3	3.2	0	3.2	3.2	3.1	0	0.1	0	0	1.8			
REF. NO. / MODE	QR33009			QR33010			QR33011													
	E	C	B	E	C	B	E	C	B											
PLAY	3.2	3.2	3.2	0.5	0	3.2	3.2	3.2	0.1											

DIGITAL SUB C.B.A.

REF. NO.	IC34002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	1.5	1.4	1.4	1.4	4.0	0	0	3.2	1.9	5.1	1.0	1.2	1.9	1.7	1.6	1.6	1.5	1.4	5.1	1.8
REF. NO.	IC34002																			
MODE	21	22	23	24	25	26	27	28												
PLAY	3.2	2.0	0	1.6	1.6	1.8	2.0	1.8												
REF. NO.	IC36002																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	5.1	3.9	0	0	0	0	5.1	0	0	4.9	5.1	0	0	0	3.7	0	0	0	0.2	0
REF. NO.	IC36002																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36				
PLAY	0	0	0	0	0	0	3.1	0	3.2	0	0	0	1.7	2.1	0	5.1				
REF. NO.	IC36005					QR36001														
MODE	1	2	3			E	C	B												
PLAY	5.1	5.1	0			0	5.0	0												

7-19. DIGITAL SUB SCHEMATIC DIAGRAM



deitype		
		VALUE
∿	R	(1B)
⊣⊢	C	(1B)

SCM–29

ANALOG Y/C C.B.A.

REF. NO. / MODE	IC30001																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	5.1	0	0.2	0	0.4	3.3	0.2	3.0	5.1	2.0	2.9	3.6	0	2.3	1.4	3.7	5.1	5.1	2.7	0.8
REC	5.1	0	0.2	0	3.0	3.3	2.9	4.1	5.1	2.0	2.5	3.6	0	2.3	1.4	3.7	5.1	5.1	2.7	0.9

REF. NO. / MODE	IC30001																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	2.7	0	0.3	0.7	3.3	2.4	2.1	2.3	0.1	3.1	2.8	4.8	3.3	3.1	2.0	0	4.9	1.6	2.7	2.9
REC	2.7	0	0.4	0.7	3.3	4.9	2.1	2.3	0.3	3.2	2.8	4.6	3.3	2.9	0	0	4.9	1.7	2.7	3.0

REF. NO. / MODE	IC30001																			
	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56				
PLAY	1.5	1.5	3.0	2.3	3.0	0.9	3.0	3.0	3.4	0	0	0.8	2.6	3.0	0.1	3.0				
REC	1.8	2.1	3.0	2.3	3.0	0.9	3.0	3.0	3.0	0	0	0.6	0.7	2.2	0.1	3.2				

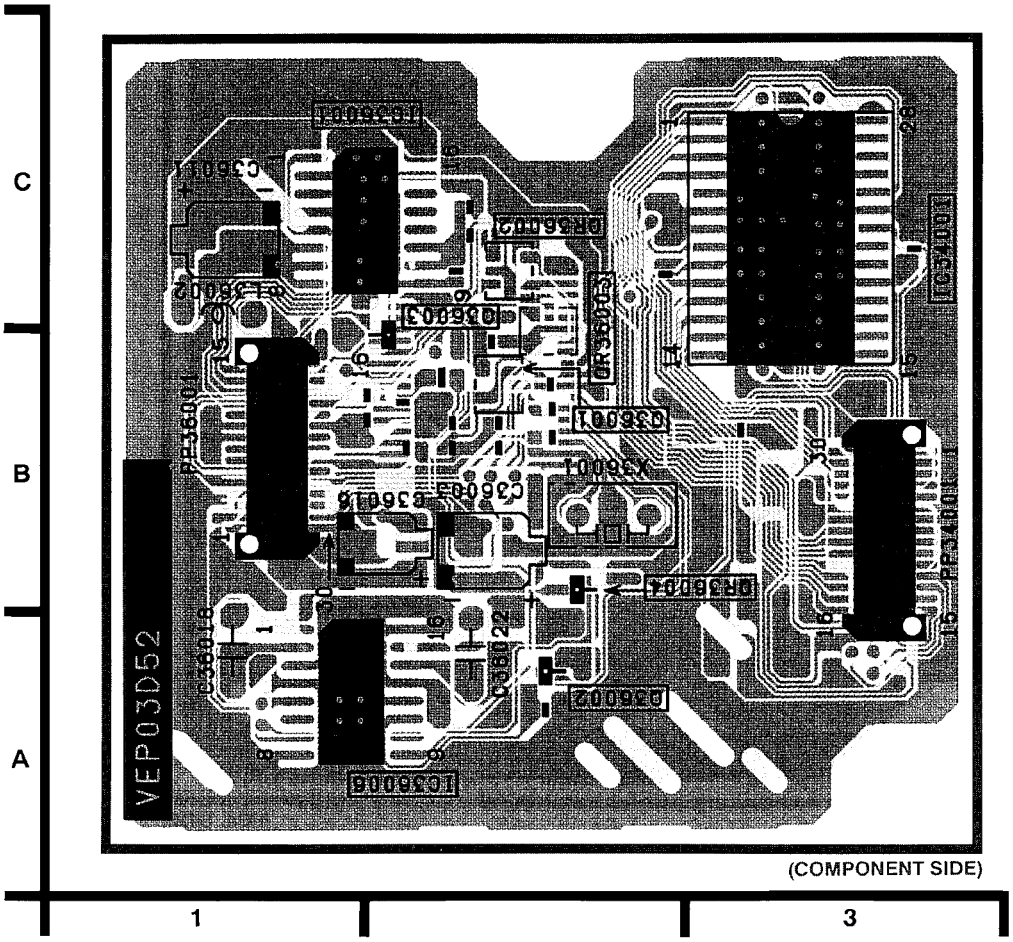
REF. NO. / MODE	IC30002								Q30001			Q30002			Q30004			Q30005		
	1	2	3	4	5	6	7	8	E	C	B	E	C	B	E	C	B	E	C	B
PLAY	0.3	0.3	0	0	0.3	0.3	0	4.9	2.1	0	1.4	2.7	0	2.0	0.8	4.1	1.6	3.5	5.1	4.1
REC	0.4	0.4	0	0	0.3	0.4	4.9	4.9	2.0	0	1.4	2.8	0	2.0	0.9	4.2	1.6	3.6	5.1	4.1

REF. NO. / MODE	Q30006			Q30007			Q30008			Q30009			Q30010			Q30011				
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	2.0	4.9	2.6	1.9	5.1	2.5	1.9	1.9	0.1	1.2	3.9	1.8	5.0	5.1	4.1	5.0	5.1	2.8		
REC	2.0	4.9	2.6	1.9	5.1	2.5	1.9	1.9	0.1	1.2	3.9	1.9	3.3	5.1	3.9	5.0	5.1	2.8		

REF. NO. / MODE	Q30012			Q30013			Q30015			Q30016			Q30017			Q30018				
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	0.9	11.6	1.6	12.2	2.0	11.5	2.2	0	1.6	2.9	0	3.0	0.1	0.1	0.7	0	2.7	0		
REC	0.9	11.6	1.6	12.3	1.9	11.6	2.2	0	1.6	2.4	0	2.2	0.1	0.1	0.7	0	2.7	0		

REF. NO. / MODE	QR30002			QR30003			QR30004			QR30005			QR30006			QR30007				
	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B		
PLAY	5.0	3.0	0	0	2.0	0	0	3.0	0	0	0.4	0.1	0	1.2	0.1	0	4.9	0		
REC	5.0	4.1	4.9	0	0	3.9	0	0	4.9	0	0.4	0.1	0	1.2	0.1	0	0	4.9		

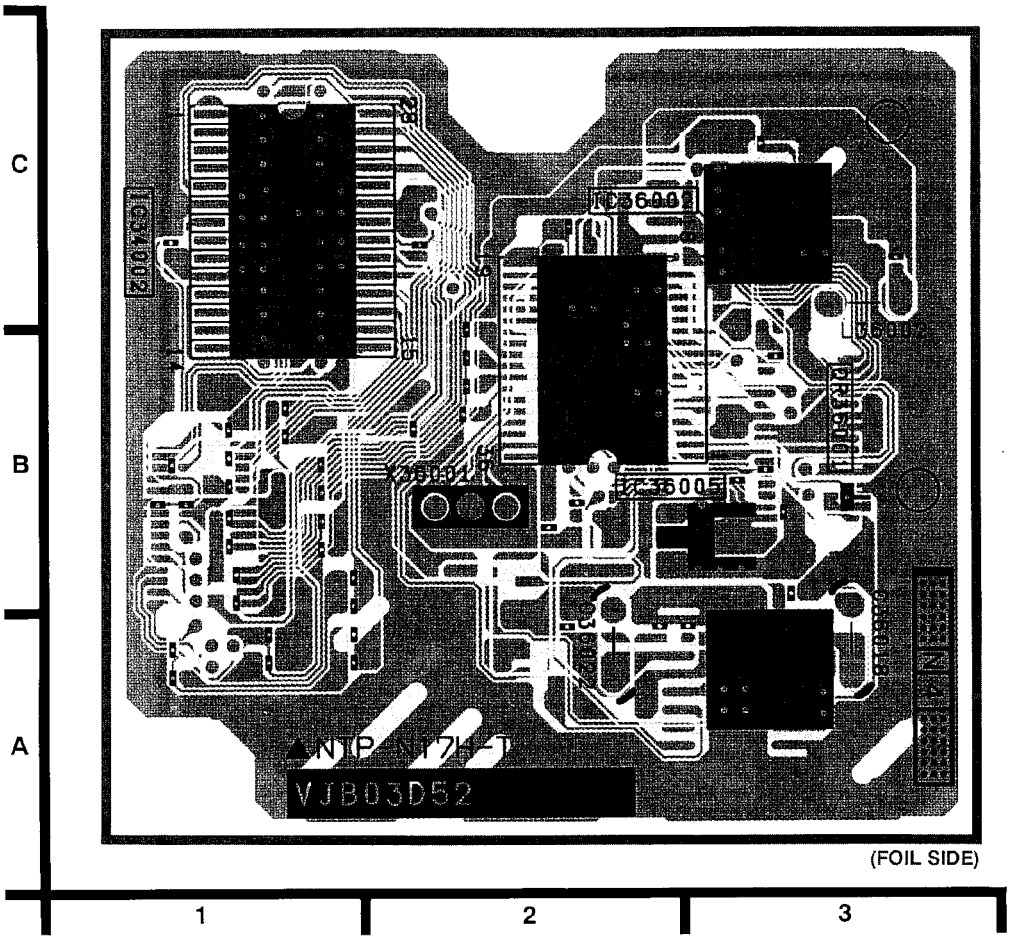
7-43. DIGITAL SUB C.B.A.



DIGITAL SUB C.B.A. (Compnent Side)			
TRANSISTER		INTEGRATED CIRCUIT	
Q36001	B-2	IC34001	C-3
Q36002	A-2	IC36001	C-1
Q36003	B-2	IC36006	A-1
TRANSISTER & RESISTER		CONNECTOR	
QR36002	C-2	PP34001	B-3
QR36004	B-2	PP36001	B-1

ADDRESS INFORMATION

DIGITAL SUB C.B.A.



DIGITAL SUB C.B.A. (Foil Side)	
TRANSISTER & RESISTER	
QR36001	B-3
INTEGRATED CIRCUIT	
IC34002	C-1
IC36002	C-3
IC36005	B-3

ADDRESS INFORMATION

SECTION 8

EXPLODED VIEWS
&
PARTS LIST

Note:
1. *Be sure to make your orders of replacement parts according to this list.
2. Unless otherwise specified, all resistors are in OHMS, K = 1,000 OHMS, all capacitors are in MICROFARADS (μF), P = $\mu\mu$F.
3. The P.C. Board units marked with "■" shown below the main assembled parts.
4. The parts marked with Ⓔ on the exploded view show the electric parts.
5. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
6. The marking (RTL) indicates the retention time is limited for this item.
   After the discontinuation of this assembly in production, it will no longer be available.

CONTENTS

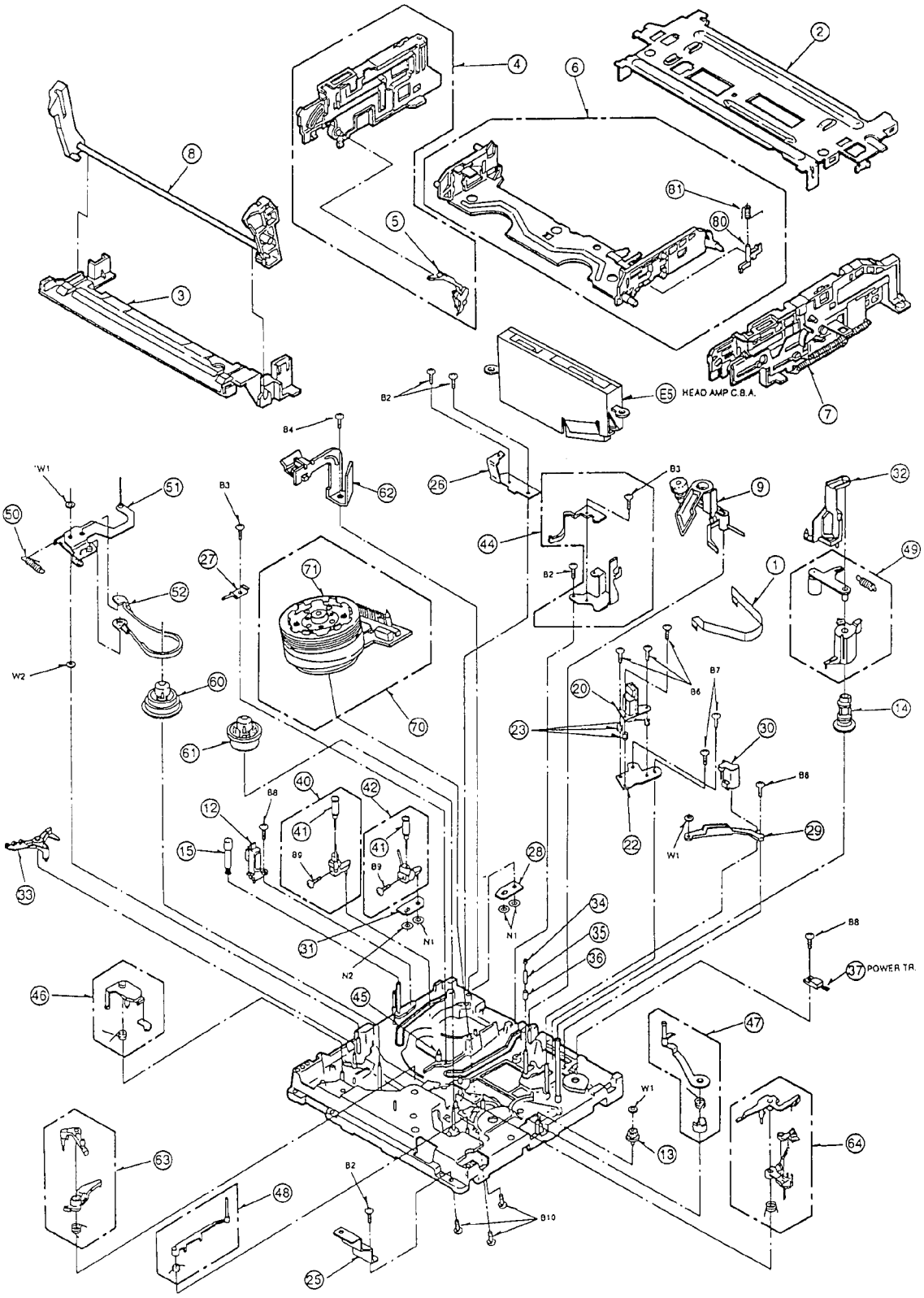
CHASSIS PARTS SECTION (TOP SIDE) **PARTS-1**
CHASSIS PARTS SECTION (BOTTOM SIDE) **PARTS-3**
CASING PARTS SECTION **PARTS-4**
PACKING PARTS SECTION **PARTS-6**
ELECTRICAL REPLACEMENT PARTS LIST **PARTS-7**

SERVICING FIXTURES AND TOOLS

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
	MOR265	MORLYTONE GREASE (BLACK)	1	FOR METAL PARTS
	VFK0131	OIL (FLASH POINT=240C)	1	
	VFK0132	BACK TENSION METER	1	
	VFK0326	HEX WRENCH SET	1	
	VFK0329	POST ADJ. SCREWDRIVER	1	
	VFK0330	FINE ADJ. SCREWDRIVER	1	
	VFK0335	RETAINING RING REMOVER	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
	VFK0680	S.C.R. GREASE (WHITE)	1	FOR PLASTIC PARTS
	VFK0851	CENTER FIXING TOOL	1	
	VFK0948A	CHECK LIGHT	1	
	VFK27	HEAD CLEANING STICK	1	
	VFK68	FAN TYPE TENSION GAUGE	1	
	VFM8080HQFP	VHS ALIGNMENT TAPE	1	

CHASSIS PARTS SECTION (TOP SIDE)



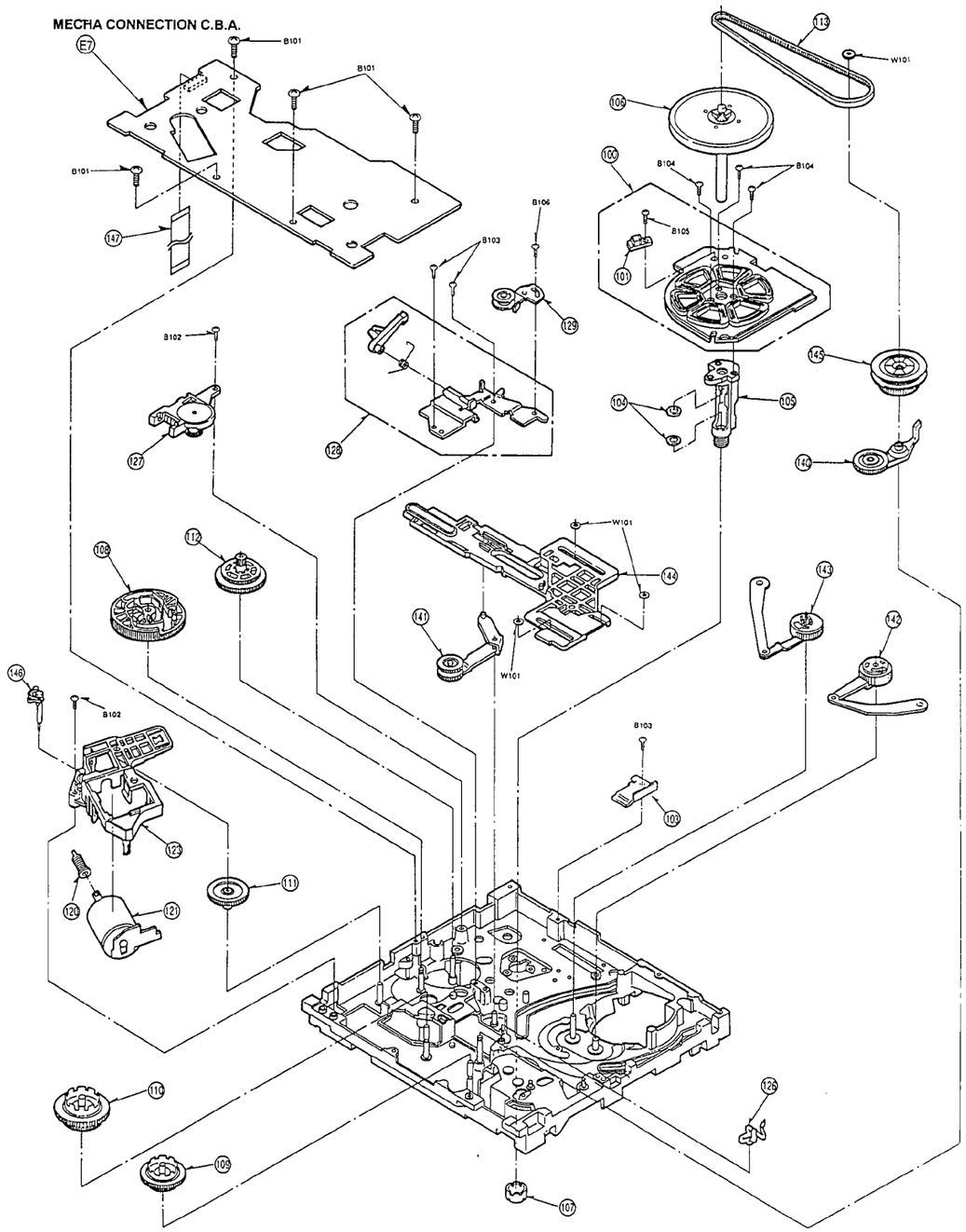
CHASSIS SECTION PARTS LIST (TOP SIDE)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	VWJ0743	FLEXIBLE CABLE (6P)	1	
2	VMA8644	TOP PLATE	1	
3	VMA8787	CASSETTE GUIDE	1	
4	VXA4660	SIDE PLATE (L) ASS'Y	1	
5	VXL2250	OPNER LEVER	1	
6	VXA4661	CASSETTE HOLDER ASS'Y	1	
7	VXA4806	SIDE PLATE (R) ASS'Y	1	
8	VXP1339	MAIN SHAFT ASS'Y	1	
9	VXL2440	CLEANER ARM ASS'Y	1	
12	VBS0052	FE HEAD	1	
13	VDG0871	CARRIAGE CONNECTION GEAR	1	
14	VDG0886	PINCH CAM GEAR	1	
15	VXP1517	IMPEDANCE ROLLER	1	
20	VED0217	A/C HEAD (1) ASS'Y	1	
22	VMA8624	A/C HEAD BASE	1	
23	VMB2515	A/C HEAD SPRING	3	
25	VMA8761	MOUNT ANGLE	1	
26	VMA8810	HEAD AMP ANGLE	1	
27	VMC0917	EARTH SPRING	1	
28	VMA8874	INCLIND BASE HOLDER (S)	1	
29	VMD2078	P5 STOPPER BASE	1	
30	VXA4927	P5 POST STOPPER	1	
31	VMA8873	INCLIND BASE HOLDER (T)	1	
32	VMD2101	OPENER PIECE	1	
33	VML2776	TENSION SPRING ARM	1	
34	VMX1544	P4 UPPER LIMITER	1	
35	VMX2175	P4 SLEEVE	1	
36	VMX2176	P4 LOWER LIMITER	1	
37	2SB1370YD01E	POWER TRANSISTOR	1	
40	VXA5245KIT	INCLINED BASE (S) ASS'Y	1	
41	VXP1415	ROLLER POST	2	
42	VXA5247KIT	INCLINED BASE (T) ASS'Y	1	
44	VXA5170	HEAD AMP MOUNT ANGLE (R)	1	
45	VMS5383	CASSETTE POSITION FIXTURE	1	
46	VXL2310	REVIEW ARM ASS'Y	1	
47	VXL2306	P5 ARM ASS'Y	1	
48	VXL2394	TAKE UP TENSION REGULATOR	1	
49	VXL2246	PINCH ARM ASS'Y	1	
50	VMB2434	TENSION SPRING	1	
51	VXL2309	TENSION ARM (1) ASS'Y	1	
52	VXZ0310	TENSION BAND ASS'Y	1	
60	VXR0221	SUPPLY REEL TABLE ASS'Y	1	
61	VXR0237	TAKE-UP REEL TABLE ASS'Y	1	
62	VXS0241	EARTH PLATE	1	
63	VXZ0312	SUPPLY BRAKE ARM ASS'Y	1	
64	VXZ0313	TAKE UP BRAKE ARM ASS'Y	1	
70	VEG1207	CYLINDER UNIT	1	
71	VXP1750	UPPER CYLINDER UNIT	1	
80	VML2680	RELEASE LEVER	1	
81	VMB2013	RELEASE SPRING	1	
B2	XTV26+8F	SCREW	4	
B3	XTV26+4F	SCREW	2	
B4	XTN3+6FFZ	SCREW	1	
B6	VHD0762	SCREW	3	
B7	XTV26+8FZ	SCREW	2	
B8	XTV26+8F	SCREW	3	
B9	XQN2+AJ4	SCREW	2	
B10	VHD0342	SCREW	3	
B11	XTS26+8G	SCREW	1	
N1	VHN0192	PUSH NUT (3)	3	
N2	VHN0193	PUSH NUT (4)	1	
W1	VMX2208	CUT WASHER	3	
W2	XWGV26D5G	WASHER	1	

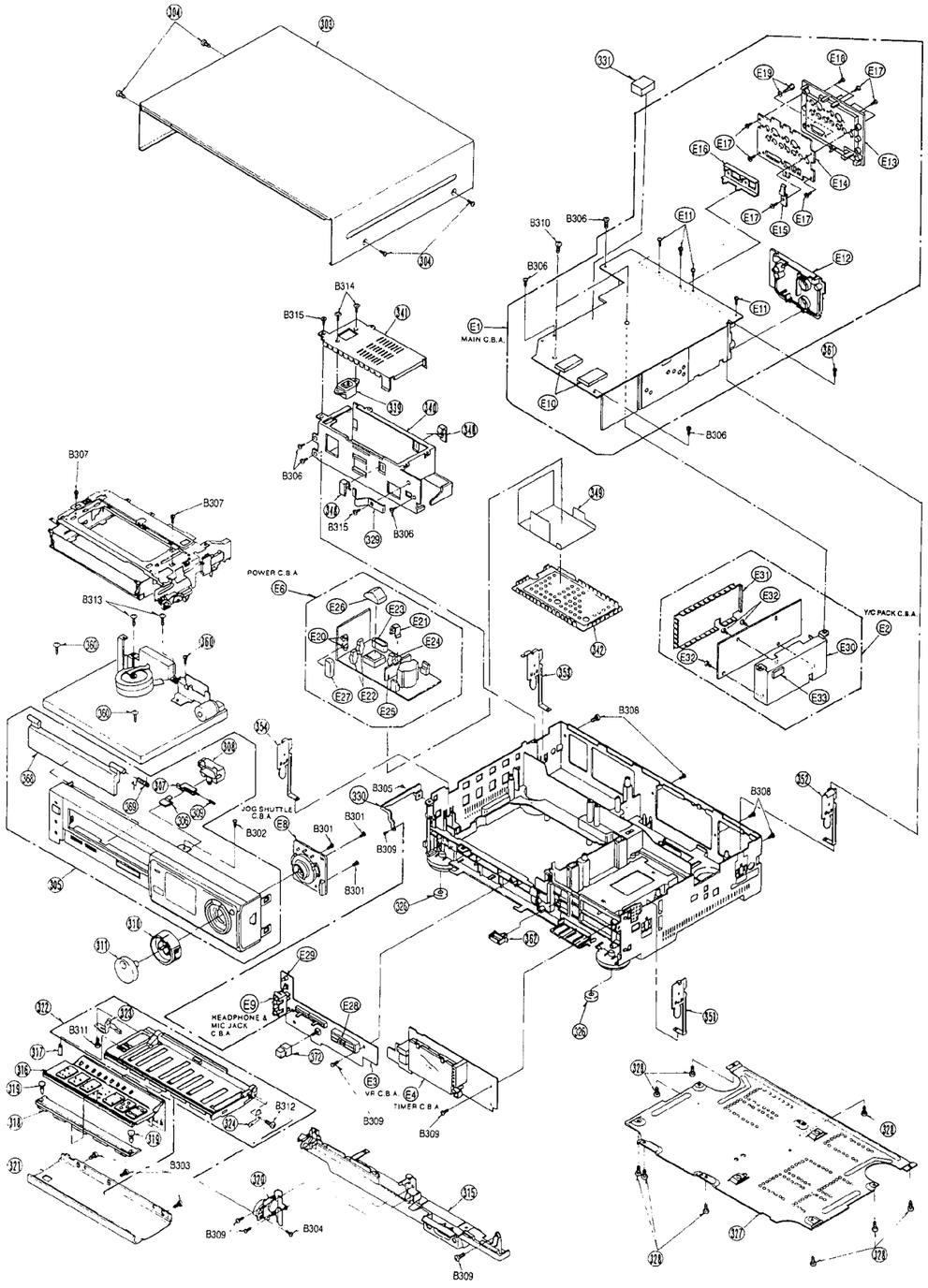
CHASSIS SECTION PARTS LIST (BOTTOM SIDE)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
100	VEK5927	STATOR ASS'Y	1	
101	V9K0061	FG HEAD	1	
103	VMA8930	ROTOR STOPPER	1	
104	VMX1927	OIL SEAL	2	
105	VXD0140	HOUSING ASS'Y	1	
106	VXP1528	ROTOR	1	
107	VXQ0297	THRUST SCREW ASS'Y	1	
108	VDG0813	MAIN CAM GEAR	1	
109	VDG0856	SUPPLY REEL GEAR	1	
110	VDG0857	TAKE UP REEL GEAR	1	
111	VDG0868	WORM WHEEL GEAR	1	
112	VDG0885	SUB CAM GEAR	1	
113	VDV0235	TIMING BELT	1	
120	VDG0866	WORM GEAR	1	
121	VEM0427	LOADING MOTOR (1) ASS'Y	1	
123	VMD1942	MOTOR BRACKET	1	
126	VML2725	IDLER CONTROL LEVER	1	
127	VSS0365	MODE SW	1	
128	VXA5138	SS BRAKE BASE ASS'Y	1	
129	VXA4799	TENSION ROLLER ASS'Y	1	
140	VXL2378	IDLER ARM ASS'Y	1	
141	VXL2372	DIRECT LEVER ASS'Y	1	
142	VXL2289	SUPPLY LOADING ARM ASS'Y	1	
143	VXL2300	TAKE UP LOADING ARM ASS'Y	1	
144	VXL2307	MAIN LEVER ASS'Y	1	
145	VXP1409	CENTRE CLUTCH	1	
146	VMD2153	S-VHS SW ACTUATER	1	
147	VWJ14AW230M0	FLEXIBLE CABLE	1	
B101	XTV26+6FFR	SCREW	1	
B102	XTV26+8F	SCREW	2	
B103	XTV26+6F	SCREW	3	
B104	VHD0753	SCREW	3	
B105	VHD0754	SCREW	1	
B106	XSB26+4FZ	SCREW	1	
W101	VMX2208	CUT WASHER	4	

CHASSIS PARTS SECTION (BOTTOM SIDE)



CASING PARTS SECTION



PARTS–4

CASING SECTION PARTS LIST

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
303	VGM1155	TOP PANEL	1	
304	VHD0165	TOP PANEL SCREW	4	
305	VYP8821	FRONT PANEL	1	
306	VGU5246	DOOR OPEN BUTTON	1	
307	VGU4498	DOOR LOCK LEVER	1	
308	VGU4829	LOCK LEVER HOLDER	1	
309	VMB1963	LOCK LEVER SPRING	1	
310	VGU5846	KNOB	1	
311	VXU1088	JOG KNOB	1	
315	VYF2470	SUPPORT PANEL	1	
316	VES0885	DOOR PANEL	1	
317	VGU0486	PANEL LIGHT	1	
318	VKF1852	DOOR SUPPORT PANEL	1	
319	VMG0857	CUSHION RUBBER	2	
320	VXU1101	DOOR GEAR	1	
321	VGK2358	ALUMINUM PANEL	1	
322	VYP4016	DOOR PANEL	1	
323	VMC0522	DOOR EARTH SPRING	1	
324	VMP2314	DOOR PANEL ANGLE	1	
326	VKA0193	FOOT	2	
327	VKU0357	BOTTOM PLATE	1	
328	VHD0059	SCREW	9	
329	VMC1238	EARTH PLATE SPRING	1	
330	VMP5209	EARTH ANGLE	1	
331	VQQ4386	P.C.BOARD CUSHION	1	
339	VJS2985	CONNECTOR (FEMALE)	1	
340	VXA3571	SHIELD PLATE (MIDDLE)	1	
341	VSC4224	SHIELD PLATE (UPPER)	1	
342	VSC2237	SHIELD PLATE (BOTTOM)	1	
344	VSC2980	HEAT SINK	1	
346	VGQ1615	IC HOLDER	1	
347	VMZ1455	INSULATION SHEET	1	
348	VMC0357	TRANSISTOR SPRING	2	
349	VMZ2381	BARRIER	1	
350	VMZ0429	FUSE COVER	1	
351	VMP2334	HOLDER ANGLE (F,R)	1	
352	VMP2335	HOLDER ANGLE (B,R)	1	
353	VMP4683	HOLDER ANGLE (B,L)	1	
354	VMP4682	HOLDER ANGLE (F,L)	1	
360	VHD0188	SCREW	3	
362	VJF0102	WIRE CLIP	1	
365	VJH082C	ANTENNA TERMINAL	1	
368	VKF2127	BLINDER PANEL	1	
369	VMB2521	BLINDER SPRING	1	
372	VGU8899	RESET BUTTON	1	
B301	XTN26+6GR	SCREW	3	
B302	XTW3+10PR	SCREW	1	
B303	XTS26+6JFZ	SCREW	1	
B304	XQN26+AN4FZ	SCREW	1	
B305	XTS4+10J	SCREW	1	
B306	XTV3+10JFR	SCREW	6	
B307	XTB26+8G	SCREW	2	
B308	XTV3+10GFZ	SCREW	4	
B309	XTV3+12GR	SCREW	6	
B310	XYE3+EF8	SCREW	2	
B311	XTN2+4J	SCREW	1	
B312	XTS2+6JFZ	SCREW	1	
B313	XTW3+8TR	SCREW	2	
B314	XYN3+F6FZ	SCREW	2	
B315	XTV3+8F	SCREW	2	

PACKING SECTION PARTS LIST

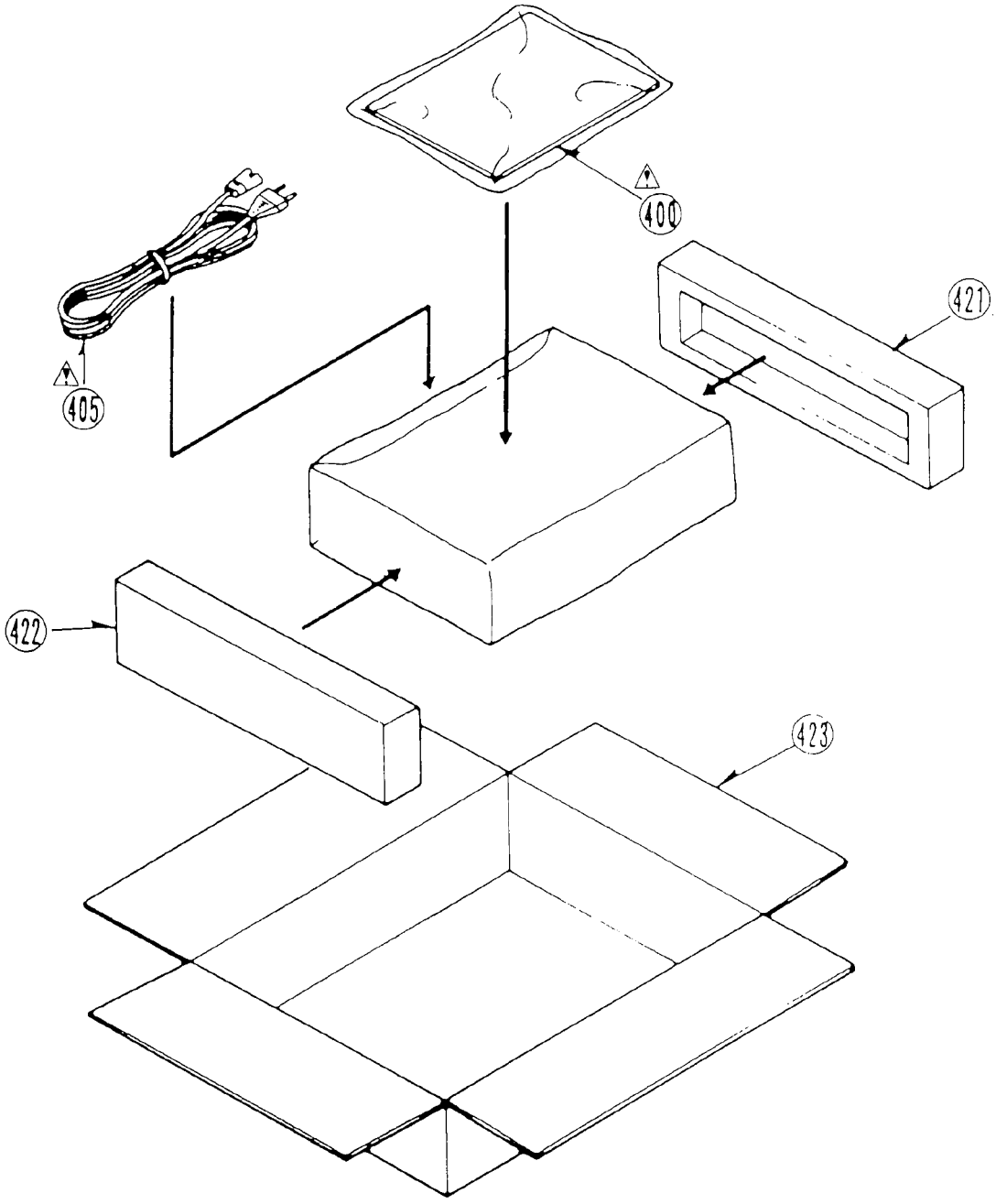
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS
FOR SAFETY, WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ 400	VQT7592	OPERATING INSTRUCTIONS	1	
⚠ 405	VJA0488	POWER CODE	1	
421	VPN3400	CUSHION (R)	1	
422	VPN3401	CUSHION (L)	1	
423	VPG9506	PACKING CASE	1	

PARTS–5

PACKING PARTS SECTION

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS. USE ONLY THE SAME TYPE.



ELECTRICAL REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■ E1	VEP06A05C	MAIN C. B. A.	1	(RTL)
■	VEP00X63A	MONO MULTI C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP02439A	SUB SERVO C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP03B68A	RF AMP C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP03E47A	I/O C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP00Z45A	REMOTE C. B. A.	1	(RTL) FOR VEP03E47A
■	VEP04506A	AUDIO 2 C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP04353B	FM AUDIO C. B. A.	1	(RTL) FOR VEP04506B
■	VEP04507A	AUDIO 1 C. B. A.	1	(RTL) FOR VEP06A05B
■ E2	VEP03D51A	Y/C PACK C. B. A.	1	(RTL)
■	VEP00Z16A	Y/C SUB C. B. A.	1	(RTL) FOR VEP03D51A
■	VEP03B48C	SUB VIDEO C. B. A.	1	(RTL) FOR VEP03D51A
■	VEP03D52A	DIGITAL SUB C. B. A.	1	(RTL) FOR VEP03D51A
■ E3	VEP06A06A	FRONT VR C. B. A.	1	(RTL)
■	VEP00V50A	HP/MIC C. B. A.	1	(RTL) FOR VEP06A06A
■ E4	VEP07800B	TIMER C. B. A.	1	(RTL)
■ E5	VEP05202H	HEAD AMP C. B. A.	1	(RTL)
■ E6	VEP01617A	POWER C. B. A.	1	(RTL)
■ E7	VEP00T87A	MECH CONNECTION C. B. A.	1	(RTL)
■ E8	VEP06A07A	JOG C. B. A.	1	(RTL)

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■ E1	VEP06A05C	MAIN C. B. A.	1	(RTL)
■	VEP00X63A	MONO MULTI C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP02439A	SUB SERVO C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP03B68A	RF AMP C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP03E47A	I/O C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP00Z45A	REMOTE C. B. A.	1	(RTL) FOR VEP03E47A
■	VEP04506A	AUDIO 2 C. B. A.	1	(RTL) FOR VEP06A05B
■	VEP04353B	FM AUDIO C. B. A.	1	(RTL) FOR VEP04506B
■	VEP04507A	AUDIO 1 C. B. A.	1	(RTL) FOR VEP06A05B
C1	ECUX1E104KBN	C. CAPACITOR CH 25V 0.1U	1	
C2	ECHU1H104JB	P. CAPACITOR 50V 0.1U	1	
C401, 02	ECEV1CAN4R7R	E. CAPACITOR CH 16V 4.7U	2	
C405	ECHU1C682JA5	P. CAPACITOR 16V 6800P	1	
C406	ECUM1H102JN	C. CAPACITOR CH 50V 1000P	1	
C407	ECHU1C223JA5	P. CAPACITOR 16V 0.022U	1	
C408	ECEV1EA100	E. CAPACITOR CH 25V 10U	1	
C409	ECHU1C223JA5	P. CAPACITOR 16V 0.022U	1	
C410	ECEV1EA4R7	E. CAPACITOR CH 25V 4.7U	1	
C411	ECEV1CA470P	E. CAPACITOR CH 16V 47U	1	
C412	ECHU1C103JA5	P. CAPACITOR 16V 0.01U	1	
C413	ECUM1H332KBN	C. CAPACITOR CH 50V 3300P	1	
C414-16	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	3	
C417	ECEV1EA4R7	E. CAPACITOR CH 25V 4.7U	1	
C418	ECWV1E104JS	P. CAPACITOR CH 25V 0.1U	1	
C419	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C420	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	1	
C421-23	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	3	
C424	ECWV1E154JS	P. CAPACITOR CH 25V 0.15U	1	
C425	ECWV1E104JS	P. CAPACITOR CH 25V 0.1U	1	
C426	ECUM1H331JCN	C. CAPACITOR CH 50V 330P	1	
C427	ECUM1H102JN	C. CAPACITOR CH 50V 1000P	1	
C428	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C431	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C432	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	1	
C433	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C434	ECWV1E104JS	P. CAPACITOR CH 25V 0.1U	1	
C435	ECEV1EA4R7	E. CAPACITOR CH 25V 4.7U	1	
C436-38	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	3	
C439	ECUM1H332KBN	C. CAPACITOR CH 50V 3300P	1	
C440	ECHU1C103JA5	P. CAPACITOR 16V 0.01U	1	
C441	ECEV1CA470P	E. CAPACITOR CH 16V 47U	1	
C442	ECEV1EA4R7	E. CAPACITOR CH 25V 4.7U	1	
C443	ECHU1C223JA5	P. CAPACITOR 16V 0.022U	1	
C444	ECEV1EA100	E. CAPACITOR CH 25V 10U	1	
C445	ECUM1H102JN	C. CAPACITOR CH 50V 1000P	1	
C446	ECHU1C223JA5	P. CAPACITOR 16V 0.022U	1	
C447	ECHU1C682JA5	P. CAPACITOR 16V 6800P	1	
C449	ECEV1HA010	E. CAPACITOR CH 50V 1U	1	
C450-52	ECEV1HA3R3	E. CAPACITOR CH 50V 3.3U	3	
C453, 54	ECEV1CA100	E. CAPACITOR CH 16V 10U	2	
C455	ECEV1CA470P	E. CAPACITOR CH 16V 47U	1	
C456	ECEV1HA010	E. CAPACITOR CH 50V 1U	1	
C457	ECEV1CA220P	E. CAPACITOR CH 16V 22U	1	
C458	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C459, 60	ECEV0JA470	E. CAPACITOR CH6.3V 47U	2	
C461, 62	ECEV1HA010	E. CAPACITOR CH 50V 1U	2	
C463	ECWV1E124JS	P. CAPACITOR CH 25V 0.12U	1	
C1002	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C1003	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C1004	ECEA1AKA470	E. CAPACITOR 10V 47U	1	
C1005, 06	ECUM1H472KBN	C. CAPACITOR CH 50V 4700P	2	
C1007	ECEA0JKA221	E. CAPACITOR 6.3V 220U	1	
C1008	ECEA1AKA470	E. CAPACITOR 10V 47U	1	
C1009	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C1010, 11	ECUM1E104ZFN	C. CAPACITOR CH 25V 0.1U	2	
C1012	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C1013	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C1014	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C1015, 16	ECEA0JKA470	E. CAPACITOR 6.3V 47U	2	
C2001	ECQV1H683JM	P. CAPACITOR 50V 0.068U	1	
C2002, 03	ECUM1C105ZFN	C. CAPACITOR CH 16V 1U	2	
C2009	ECUM1H223KBN	C. CAPACITOR CH 50V 0.022U	1	
C2010	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C2011	ECUM1H392KBN	C. CAPACITOR CH 50V 3900P	1	
C2012	ECEA1HKA3R3	E. CAPACITOR 50V 3.3U	1	
C2013	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C2014	ECEA0JKA221	E. CAPACITOR 6.3V 220U	1	
C2015	ECUM1H471JCN	C. CAPACITOR CH 50V 470P	1	
C2016	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C2017	ECEA0JKA220	E. CAPACITOR 6.3V 22U	1	
C2018	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C2019	ECEA0JKA220	E. CAPACITOR 6.3V 22U	1	
C2020	ECUM1H222KBN	C. CAPACITOR CH 50V 2200P	1	
C2021, 22	ECEA1EKN3R3	E. CAPACITOR 25V 3.3U	2	
C2023	ECEA1HKA4R7	E. CAPACITOR 50V 4.7U	1	
C2025	ECEA0JKA221	E. CAPACITOR 6.3V 220U	1	
C2026	ECKF1H392KB	C. CAPACITOR 50V 3900P	1	
C2027	ECEA1HKA3R3	E. CAPACITOR 50V 3.3U	1	
C2029	ECQV1H104JL	P. CAPACITOR 50V 0.1U	1	
C2030	ECUM1H103KBN	C. CAPACITOR CH 50V 0.01U	1	
C2031	ECUM1H222KBN	C. CAPACITOR CH 50V 2200P	1	
C2032	ECEA1HKAR47	E. CAPACITOR 50V 0.47U	1	
C2034	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	1	
C2035	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C2036	ECUM1H472KBN	C. CAPACITOR CH 50V 4700P	1	
C2037	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C2039, 40	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	2	
C2502	ECQV1H683JM	P. CAPACITOR 50V 0.068U	1	
C2503, 04	ECUM1H333KBN	C. CAPACITOR CH 50V 0.033U	2	
C2505	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C2506	ECA0JM221	E. CAPACITOR 6.3V 220U	1	
C2507	ECEA1HKAR22	E. CAPACITOR 50V 0.22U	1	
C2508	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C2509	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C2510-13	ECUM1H333KBN	C. CAPACITOR CH 50V 0.033U	4	
C2514-16	ECEA1HKA2R2	E. CAPACITOR 50V 2.2U	3	
C2517	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C2518, 19	ECUM1H103KBN	C. CAPACITOR CH 50V 0.01U	2	
C2520	ECUM1H330JCN	C. CAPACITOR CH 50V 33P	1	
C2521, 22	ECEA1HKNR47	E. CAPACITOR 50V 0.47U	2	
C2523	ECUM1H330JCN	C. CAPACITOR CH 50V 33P	1	
C2525	ECUX1E104KBN	C. CAPACITOR CH 25V 0.1U	1	
C3002	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C3003	ECUM1C105ZFN	C. CAPACITOR CH 16V 1U	1	
C3005	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C3006	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3009	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3010	ECUX1E104KBN	C. CAPACITOR CH 25V 0.1U	1	
C3011	ECUM1H330JCN	C. CAPACITOR CH 50V 33P	1	
C3012	ECUM1H100DCN	C. CAPACITOR CH 50V 10P	1	
C3013	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3014	ECUX1E104KBN	C. CAPACITOR CH 25V 0.1U	1	
C3015	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3016	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C3017, 18	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	2	
C3019	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3020	ECUX1E104KBN	C. CAPACITOR CH 25V 0.1U	1	
C3028	ECEA0JU221	E. CAPACITOR 6.3V 220U	1	
C3029	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3030	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C3031	ECEA0JU331	E. CAPACITOR 6.3V 330U	1	
C3032	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C3033	ECEA0JU102	E. CAPACITOR 6.3V 470U	1	
C3034, 35	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C3036	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C3037, 38	ECEA1EKA4R7	E. CAPACITOR 25V 4.7U	2	
C3039, 40	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C3061	ECUM1E104ZFN	C. CAPACITOR CH 25V 0.1U	1	
C3062	ECUM1H121JCN	C. CAPACITOR CH 50V 120P	1	
C3063	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C3064	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C3065, 66	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C3101	ECUM1E104ZFN	C. CAPACITOR CH 25V 0.1U	1	
C3102	ECUM1H120JCN	C. CAPACITOR CH 50V 12P	1	
C3103	ECUM1H151JCN	C. CAPACITOR CH 50V 150P	1	
C3104	ECUM1H391JCN	C. CAPACITOR CH 50V 390P	1	
C3105	ECUM1H270JCN	C. CAPACITOR CH 50V 27P	1	
C3106	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3107	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	1	
C3108	ECUM1H560JCN	C. CAPACITOR CH 50V 56P	1	
C3109	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3110	ECUM1H150JCN	C. CAPACITOR CH 50V 15P	1	
C3111	ECUM1H470JCN	C. CAPACITOR CH 50V 47P	1	
C3112	ECUM1H180JCN	C. CAPACITOR CH 50V 18P	1	
C3113	ECUM1H331JCN	C. CAPACITOR CH 50V 330P	1	
C3114	ECUM1H220JCN	C. CAPACITOR CH 50V 22P	1	
C3115-17	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	3	
C3118-20	ECUM1H390JCN	C. CAPACITOR CH 50V 39P	3	
C3121	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3122	ECUM1H331JCN	C. CAPACITOR CH 50V 330P	1	
C3123	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C3124-27	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	4	
C3128	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C3129	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3130, 31	ECUM1H120JCN	C. CAPACITOR CH 50V 12P	2	
C3133, 34	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C3135	ECUM1H180JCN	C. CAPACITOR CH 50V 18P	1	
C3136	ECUM1H680JCN	C. CAPACITOR CH 50V 68P	1	
C3137	ECUM1H271JCN	C. CAPACITOR CH 50V 270P	1	
C3138	ECUM1H181JCN	C. CAPACITOR CH 50V 180P	1	
C3139	ECUM1H820JCN	C. CAPACITOR CH 50V 82P	1	
C3141	ECUM1H120JCN	C. CAPACITOR CH 50V 12P	1	
C3142	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3505	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C3506	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3508	ECQB1H103JF	P. CAPACITOR 50V 0.01U	1	
C3509	ECQB1H332JF	P. CAPACITOR 50V 3300P	1	
C3510	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C3511	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C3512	ECHS1H562GZ	P. CAPACITOR 50V 5600P	1	
C3513	ECQB1H272JF	P. CAPACITOR 50V 2.7U	1	
C3514	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3515	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C3516	ECEA1HKA3R3	E. CAPACITOR 50V 3.3U	1	
C3601	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C3602-05	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	4	
C3606	ECUM1E104ZFN	C. CAPACITOR CH 25V 0.1U	1	
C3607-09	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	3	
C3610	ECEA1EKA4R7	E. CAPACITOR 25V 4.7U	1	
C3611	ECUM1H333KBN	C. CAPACITOR CH 50V 0.033U	1	
C3612	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C3613-15	ECUM1E473KBN	C. CAPACITOR CH 25V 0.047U	3	
C3616	ECEA1EKA4R7	E. CAPACITOR 25V 4.7U	1	
C3617	ECUM1H390JCN	C. CAPACITOR CH 50V 39P	1	
C3618	ECEA0JKN470	E. CAPACITOR 6.3V 47U	1	
C3619	ECCF1H050CC	C. CAPACITOR 50V 5P	1	
C3801	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3802	ECEA1AKA220	E. CAPACITOR 10V 22U	1	
C3803, 04	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C3805	ECEA1AKA220	E. CAPACITOR 10V 22U	1	
C3811	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3813	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C3814, 15	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	2	
C3821	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C3873	ECEA1AKA220	E. CAPACITOR 10V 22U	1	
C3876	ECEA1HKA0R1	E. CAPACITOR 50V 0.1U	1	
C3877	ECEA1HKA100	E. CAPACITOR 50V 10U	1	
C3878, 79	ECUM1H102JCN	C. CAPACITOR CH 50V 1000P	2	
C3880	ECUM1H272KBN	C. CAPACITOR CH 50V 2700P	1	
C3881	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C3882	ECUM1E104ZFN	C. CAPACITOR CH 25V 0.1U	1	
C3883-87	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	5	
C3888	ECUM1E104ZFN	C. CAPACITOR CH 25V 0.1U	1	
C3889	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C3890	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C3891, 92	ECUM1H090DCN	C. CAPACITOR CH 50V 9P	2	
C3893	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C3894	ECUM1E104ZFN	C. CAPACITOR CH 25V 0.1U	1	
C3895, 96	ECUM1H100DCN	C. CAPACITOR CH 50V 10P	2	
C3897	ECUM1H221JCN	C. CAPACITOR CH 50V 220P	1	
C3898	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C3899	ECUM1E104ZFN	C. CAPACITOR CH 25V 0.1U	1	
C3900	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C3901	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C3902-04	ECUM1E104ZFN	C. CAPACITOR CH 25V 0.1U	3	
C3951	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C4001	ECEA1CU221	E. CAPACITOR 16V 220U	1	
C4002	ECEA1CKA330	E. CAPACITOR 16V 33U	1	
C4003	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C4004	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C4005	ECQB1H183JF	P. CAPACITOR 50V 0.018U	1	
C4006	ECQB1H393JF	P. CAPACITOR 50V 0.039U	1	
C4007	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4008	ECUM1H822KBN	C. CAPACITOR CH 50V 8200P	1	
C4009	ECQB1H103JF	P. CAPACITOR 50V 0.01U	1	
C4010	ECUM1H103KBN	C. CAPACITOR CH 50V 0.01U	1	
C4011	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C4012	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4013	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C4014	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4015	ECUM1H223ZFN	C. CAPACITOR CH 50V 0.022U	1	
C4016	ECQB1H122JF	P. CAPACITOR 50V 1200P	1	
C4017	ECUM1H472KBN	C. CAPACITOR CH 50V 4700P	1	
C4018	ECSF1CE106	E. CAPACITOR 16V 10M	1	
C4019	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C4020	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C4021	ECQB1H103JF	P. CAPACITOR 50V 0.01U	1	
C4022	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4023	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C4024-29	ECEA1CKA100	E. CAPACITOR 16V 10U	6	
C4030	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C4031	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4032	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C4033	ECQB1H823JF	P. CAPACITOR 50V 0.082U	1	
C4034	ECEA1HKA4R7	E. CAPACITOR 50V 4.7U	1	
C4501	ECEA1CU221	E. CAPACITOR 16V 220U	1	
C4502	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C4503	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C4504, 05	ECEA1HKA010	E. CAPACITOR 50V 1U	2	
C4506, 07	ECEA1CKA101	E. CAPACITOR 16V 100U	2	
C4508	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C4509, 10	ECEA1CKA101	E. CAPACITOR 16V 100U	2	
C4511	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C4512-14	ECUM1H103KBN	C. CAPACITOR CH 50V 0.01U	3	
C4515, 16	ECEA1CKA100	E. CAPACITOR 16V 10U	2	
C4517	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C4801	ECEA1CU471	E. CAPACITOR 16V 470U	1	
C4802, 03	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	2	
C4804	ECCD2H181J	C. CAPACITOR 500V 180P	1	
C4805	ECHS1222JZ	P. CAPACITOR 100V 2200P	1	
C4806	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C4807	ECQB1H103JF	P. CAPACITOR 50V 0.01U	1	
C4808	ECEA1CKA330	E. CAPACITOR 16V 33U	1	
C4809	ECEA1CKA220	E. CAPACITOR 16V 22U	1	
C4810, 11	ECEA1HKA010	E. CAPACITOR 50V 1U	2	
C4812	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C4813	ECEA1HKA010	E. CAPACITOR 50V 1U	1	
C4814	ECEA1HKA4R7	E. CAPACITOR 50V 4.7U	1	
C6002	ECUM1H103KBN	C. CAPACITOR CH 50V 0.01U	1	
C6003	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C6005, 06	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	2	
C6007	ECEA1HKA4R7	E. CAPACITOR 50V 4.7U	1	
C6008	ECEA0JKA220	E. CAPACITOR 6.3V 22U	1	
C6009	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C6010	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C6011	ECQV1H104JL	P. CAPACITOR 50V 0.1U	1	
C6012	ECA0JM471	E. CAPACITOR 6.3V 470U	1	
C6013	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C6014, 15	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C6016	ECUM1H471JCN	C. CAPACITOR CH 50V 470P	1	
C6017, 18	ECUM1H180JCN	C. CAPACITOR CH 50V 18P	2	
C6019, 20	ECUM1H271JCN	C. CAPACITOR CH 50V 270P	2	
C6021	ECUM1H221JCN	C. CAPACITOR CH 50V 220P	1	
C6022, 23	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C6024	ECEA1AKA470	E. CAPACITOR 10V 47U	1	
C6025	ECA0JKF560	E. CAPACITOR 6.3V 56U	1	
C6026	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C6028	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C6029	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C6030	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C6031	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C6033	ECEA1CGE470	E. CAPACITOR 16V 47U	1	
C6035	ECEA1AKA470	E. CAPACITOR 10V 47U	1	
C6039	ECUM1H103KBN	C. CAPACITOR CH 50V 0.01U	1	
C6041	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C6042, 43	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	2	
C6044	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C6046	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C6048, 49	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	2	
C6050	ECQV1H104JL	P. CAPACITOR 50V 0.1U	1	
C6051	ECEA1HKAR47	E. CAPACITOR 50V 0.47U	1	
C6052	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C6053	ECEA1AGE101	E. CAPACITOR 10V 100U	1	
C6054-58	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	5	
C6129	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C6132	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C6136	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C6905	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C6907	ECUM1C224ZFN	C. CAPACITOR CH 16V 0.22U	1	
C6908	ECEA1CKA470	E. CAPACITOR 16V 47U	1	
C6910	ECKF1H103ZF	C. CAPACITOR 50V 0.01U	1	
C6911	ECEA0JKA220	E. CAPACITOR 6.3V 22U	1	
C6912	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C6913	ECQB1H472JF	P. CAPACITOR 50V 4700P	1	
C6914	ECQB1H333JZ	P. CAPACITOR 50V 0.033U	1	
C7920	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C7921	EECF5R5U104	ELECTROLYTIC CAPACITOR	1	
C7923	ECEA1HKN4R7	E. CAPACITOR 50V 4.7U	1	
C7924	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C7925, 26	ECQV1H104JL	P. CAPACITOR 50V 0.1U	2	
D1	MA704A	DIODE	1	
D401	MA720	DIODE	1	
D1002	MA4033-H	DIODE	1	
D1003	MA723VT	DIODE	1	
D1004	MA165	DIODE	1	
D1005	MA4036	DIODE	1	
D1006	MA723VT	DIODE	1	
D2003	MA165	DIODE	1	
D2005	MA151WK	DIODE	1	
D2007	MA165	DIODE	1	
D2501	11ES1	DIODE	1	
D2502, 03	MA185	DIODE	2	
D3001, 02	MA165	DIODE	2	
D3101	MA151K	DIODE	1	
D3601	MA151K	DIODE	1	
D3871	MA152WA	DIODE	1	
D3872, 73	MA152K	DIODE	2	
D3874, 75	MA153	DIODE	2	
D4001, 02	MA165	DIODE	2	
D4004, 05	MA165	DIODE	2	
D4009-13	MA165	DIODE	5	
D4501-04	MA165	DIODE	4	
D4801	MA151WA	DIODE	1	
D6001	MA165	DIODE	1	
D6002	MA4120-M	DIODE	1	
D6003-07	MA165	DIODE	5	
D6008	MA723VT	DIODE	1	
D6009-11	MA165	DIODE	3	
D6013	MA4051-M	DIODE	1	
D6014, 15	MA165	DIODE	2	
D6016	MA4056-L	DIODE	1	
D6017	11ES1	DIODE	1	
D7908-10	11EQS04	DIODE	3	
D7913	MA165	DIODE	1	
D7914	MA151WA	DIODE	1	
D7915	MA151WK	DIODE	1	
FL3001	ELB4R057	FILTER	1	
FL3101	VLF1141	FILTER	1	
FL3601	ELB4R057	FILTER	1	
FL4501	VLF0698	FILTER	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
IC1	UPD45388G	IC	1	
IC401	BA7705K1	IC	1	
IC1001	HA17431PA	IC	1	
IC2003	MC14053BF	IC	1	
IC2501	BA6871BS	IC	1	
IC3001	AN3581S	IC	1	
IC3002	TC7S66F	IC	1	
IC3101	M52083FP	IC	1	
IC3502	AN5421N	IC	1	
IC3601	AN3250FAP	IC	1	
IC3602	MC14577CF	IC	1	
IC3871	M37702M6B259	IC	1	
IC3872	UPC339G2	IC	1	
IC3874	ADM202JRN	IC	1	
IC3875	MN1382-T	IC	1	
IC3876	TC7W04F	IC	1	
IC4001	LA7296	IC	1	
IC4002-05	NJM4558M	IC	4	
IC4006	MC14052BF	IC	1	
IC4007	MC14051BF	IC	1	
IC4008	NJM4558M	IC	1	
IC4501	AN1358S	IC	1	
IC4502	NJM4558M	IC	1	
IC4503	UPC78L05J	IC	1	
IC4504	VEP04353B	IC	1	
IC6001	MN6755320H7L	IC	1	
IC6903	BA6887-V3	IC	1	
IC7904	MC74HC86AF	IC	1	
IC7905	M66006FP	IC	1	
JK3801	VJS3155	CONNECTOR (FEMALE)	1	
JK3802	VJS3154	CONNECTOR (FEMALE)	1	
JK3803	VJJ0323	RCA PIN JACK	1	
JK3804	VJJ0322	MONITOR JACK	1	
JK3805	VJS3155	CONNECTOR (FEMALE)	1	
JK3806	VJS3154	CONNECTOR (FEMALE)	1	
JK3807, 08	VJJ0323	RCA PIN JACK	2	
JK3951	VJJ0182	SYNC EDIT JACK	1	
K3002	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	1	
K3005, 06	ERJ6GEY0R00	M.RESISTOR CH 1/10W 0	2	
L401	VLQ0163J101	COIL 100UH	1	
L403	VLQ0163J101	COIL 100UH	1	
L1001	VLP0083	COIL	1	
L2001	VLP0083	COIL	1	
L2002	VLQEL05F101K	COIL 100UH	1	
L2501	ELESE102KA	COIL 1000UH	1	
L3001, 02	VLQ0599J680	COIL 68UH	2	
L3005	VLQ0599J330	COIL 33UH	1	
L3006, 07	VLQ0599J680	COIL 68UH	2	
L3101	VLQ0599J151	COIL 150UH	1	
L3102	VLQ0599J3R9	COIL 3.9UH	1	
L3103	VLQ0599J4R7	COIL 4.7UH	1	
L3104	VLQ0599J151	COIL 150UH	1	
L3105	VLQ0599J5R6	COIL 5.6UH	1	
L3106	VLQ0599J180	COIL 18UH	1	
L3107	VLQ0599J220	COIL 22UH	1	
L3108	VLQ0599J181	COIL 180UH	1	
L3109	VLQ0599J100	COIL 10UH	1	
L3110	VLQ0599J390	COIL 39UH	1	
L3111	VLQ0599J680	COIL 68UH	1	
L3112	VLQ0599J390	COIL 39UH	1	
L3113	VLQ0599J221	COIL 220UH	1	
L3114	VLQ0599J680	COIL 68UH	1	
L3115	VLQ0599J390	COIL 39UH	1	
L3116	VLQ0599J330	COIL 33UH	1	
L3117	VLQ0599J820	COIL 82UH	1	
L3118	VLQ0599J221	COIL 220UH	1	
L3119	VLQ0599J271	COIL 270UH	1	
L3120	VLQ0599J270	COIL 27UH	1	
L3122	VLQ0599J151	COIL 150UH	1	
L3123	VLQ0599J150	COIL 15UH	1	
L3125	VLQ0599J100	COIL 10UH	1	
L3501, 02	VLQ0599J680	COIL 68UH	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
L3601	VLQ0599J680	COIL 68UH	1	
L3801	VLQEL05S680J	COIL 68UH	1	
L3803	VLQEL05S680J	COIL 68UH	1	
L3871-74	VLP0119	COIL	4	
L3875-77	VLQEL05S101J	COIL 100UH	3	
L4001	VLQEL07F101K	COIL 100UH	1	
L4002	VLQEL07F153J	COIL 0.015MH	1	
L4003	VLQ0123	COIL	1	
L4004	VLQEL05S561J	COIL 560UH	1	
L4501	VLQEL07F101K	COIL 100UH	1	
L4801	VLQ0599J471	COIL 470UH	1	
L6002	VLP0074	COIL	1	
L6003	VLQEL05K221K	COIL 220UH	1	
L6004, 05	VLQ0599J680	COIL 68UH	2	
L6006	VLP0083	COIL	1	
L6910	ELESE101KA	COIL 100UH	1	
L7907	VLQ0589J680	COIL 68UH	1	
P1, P2	VJR0797	CONNECTOR	2	
P2001	VJP3529	CONNECTOR (MALE)	1	
P2002	VJP2981A003	CONNECTOR (MALE)	1	
P2501	VJS3537A015G	CONNECTOR (FEMALE)	1	
P2502	VJP3502	CONNECTOR (MALE)	1	
P3001	VJS3537A014G	CONNECTOR (FEMALE)	1	
P3002	VJP3529	CONNECTOR (MALE)	1	
P3101	VJS3043F015W	CONNECTOR (FEMALE)	1	
P3501	VJS3043B012W	CONNECTOR (FEMALE) 12P	1	
P3871	VJP3043G003W	CONNECTOR (MALE)	1	
P3872	VJP3414A025	CONNECTOR (MALE)	1	
P4001-03	VJS3186B018	CONNECTOR (FEMALE)	3	
P4501-03	VJS3186B018	CONNECTOR (FEMALE)	3	
P4801-06	VJP3186A018W	CONNECTOR (MALE)	6	
P4807	VJP3529	CONNECTOR (MALE)	1	
P4808	VJP3043A012W	CONNECTOR (MALE) 12P	1	
P4809	VJP3529	CONNECTOR (MALE)	1	
P4810	VJS2331	CONNECTOR (FEMALE)	1	
P4811	VJP1230T	CONNECTOR (MALE) 3P	1	
P4812	VJS3537A009G	CONNECTOR (FEMALE)	1	
P4813	VJP3079	CONNECTOR (MALE)	1	
P6001	VJS3537A014G	CONNECTOR (FEMALE)	1	
P6002	VJP1242T	CONNECTOR (MALE)	1	
P6004	VJP3080	CONNECTOR (MALE)	1	
P6901	VJP1230T	CONNECTOR (MALE) 3P	1	
P7901	VJP3093	CONNECTOR (MALE)	1	
P7902	VJS3537F016G	CONNECTOR (FEMALE)	1	
P7903	VJS3537F018G	CONNECTOR (FEMALE)	1	
PP2503, 04	VJP3042A010W	CONNECTOR (MALE)	2	
PP3001	VJP3042A016W	CONNECTOR (MALE)	1	
PP3002	VJP3042G020W	CONNECTOR (MALE)	1	
PP3003	VJP3043A006W	CONNECTOR (MALE)	1	
PP3004	VJP3043A007W	CONNECTOR (MALE)	1	
PP3005	VJP3043A013W	CONNECTOR (MALE)	1	
PP3006	VJP3043G015W	CONNECTOR (MALE)	1	
PP3007	VJP3043A012W	CONNECTOR (MALE) 12P	1	
PP3008	VJP3042A006W	CONNECTOR (MALE)	1	
PS2503, 04	VJS3042B010W	CONNECTOR (FEMALE) 10P	2	
PS3801	VJS3043B012W	CONNECTOR (FEMALE) 12P	1	
PS3802	VJS3043B013W	CONNECTOR (FEMALE)	1	
PS3803	VJS3043F006W	CONNECTOR (FEMALE)	1	
PS3804	VJS3043B007W	CONNECTOR (FEMALE)	1	
PS3951	VJS3043F003W	CONNECTOR (FEMALE)	1	
Q401, 02	2SD1328-R	TRANSISTOR	2	
Q1001	2SD1330-S	TRANSISTOR	1	
Q1002	2SD973	TRANSISTOR	1	
Q1003	2SD1330	TRANSISTOR	1	
Q1004, 05	2SD1330-S	TRANSISTOR	2	
Q3001	MSB709	TRANSISTOR	1	
Q3002	MSC2295	TRANSISTOR	1	
Q3003	MSD601	TRANSISTOR	1	
Q3004	MSB709	TRANSISTOR	1	
Q3005, 06	MSD601	TRANSISTOR	2	
Q3101	MSC2295	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q3102	MSD601	TRANSISTOR	1	
Q3103, 04	MSC2295	TRANSISTOR	2	
Q3502	MSC2295	TRANSISTOR	1	
Q3503	2SA1022-B	TRANSISTOR	1	(B)
Q3504	MSB709	TRANSISTOR	1	
Q3601	MSB709	TRANSISTOR	1	
Q3602	MSD601	TRANSISTOR	1	
Q3603	MSB709	TRANSISTOR	1	
Q3801-03	MSB709	TRANSISTOR	3	
Q3804-06	MSC2295	TRANSISTOR	3	(B)
Q3872	MSD602	TRANSISTOR	1	(R)
Q3875	MSD602	TRANSISTOR	1	(R)
Q4001	MSD1328-R	TRANSISTOR	1	
Q4501, 02	MSD1328-R	TRANSISTOR	2	
Q4503	2SB710A-R	TRANSISTOR	1	
Q4504	MSB709	TRANSISTOR	1	
Q4505	MSD601	TRANSISTOR	1	
Q4801	MSD1328-R	TRANSISTOR	1	
Q4802, 03	MSD601	TRANSISTOR	2	
Q4804	2SD639	TRANSISTOR	1	
Q4805	MSD601	TRANSISTOR	1	
Q4806	MSB709	TRANSISTOR	1	
Q4807	2SB790-R	TRANSISTOR	1	(R)
Q6001	2SB643	TRANSISTOR	1	
Q6002	2SD1330-R	TRANSISTOR	1	(R)
Q6003	MSD601	TRANSISTOR	1	
Q6004	2SD1992	TRANSISTOR	1	
Q6005	MSB709	TRANSISTOR	1	
Q6006	2SD637	TRANSISTOR	1	
Q6007, 08	2SD1330-R	TRANSISTOR	2	(R)
Q6010	2SD1330-R	TRANSISTOR	1	(R)
Q6011	2SD1330-S	TRANSISTOR	1	
Q6901	2SA1309	TRANSISTOR	1	
Q6902	2SC3311	TRANSISTOR	1	
Q7907	2SD1330-S	TRANSISTOR	1	
Q7908	MSB709	TRANSISTOR	1	
QR401	UN2113	TRANSISTOR-RESISTOR	1	
QR403	UN2213	TRANSISTOR-RESISTOR	1	
QR404	UN2113	TRANSISTOR-RESISTOR	1	
QR1001	UN2215	TRANSISTOR-RESISTOR	1	
QR2001	XN1213	TRANSISTOR-RESISTOR	1	
QR2002	MUN2213	TRANSISTOR-RESISTOR	1	
QR2008	MUN2213	TRANSISTOR-RESISTOR	1	
QR3001	MUN2113	TRANSISTOR-RESISTOR	1	
QR3006	MUN2113	TRANSISTOR-RESISTOR	1	
QR3007	MUN2111	TRANSISTOR-RESISTOR	1	
QR3010	MUN2213	TRANSISTOR-RESISTOR	1	
QR3011, 12	MUN2113	TRANSISTOR-RESISTOR	2	
QR3013, 14	MUN2213	TRANSISTOR-RESISTOR	2	
QR3101	XN1213	TRANSISTOR-RESISTOR	1	
QR3102	MUN2213	TRANSISTOR-RESISTOR	1	
QR3103-05	XN1213	TRANSISTOR-RESISTOR	3	
QR3501	MUN2213	TRANSISTOR-RESISTOR	1	
QR3802	XN5501	TRANSISTOR-RESISTOR	1	
QR3804	MUN2213	TRANSISTOR-RESISTOR	1	
QR3806	MUN2213	TRANSISTOR-RESISTOR	1	
QR4001	UN2215	TRANSISTOR-RESISTOR	1	
QR4002	MUN2213	TRANSISTOR-RESISTOR	1	
QR4003, 04	MUN2211	TRANSISTOR-RESISTOR	2	
QR4005	MUN2113	TRANSISTOR-RESISTOR	1	
QR4006	MUN2213	TRANSISTOR-RESISTOR	1	
QR4007	MUN2113	TRANSISTOR-RESISTOR	1	
QR4008, 09	MUN2213	TRANSISTOR-RESISTOR	2	
QR4010	UN2115	TRANSISTOR-RESISTOR	1	
QR4011	MUN2211	TRANSISTOR-RESISTOR	1	
QR4012, 13	MUN2213	TRANSISTOR-RESISTOR	2	
QR4501	MUN2213	TRANSISTOR-RESISTOR	1	
QR4502	MUN2113	TRANSISTOR-RESISTOR	1	
QR4503	UN2216	TRANSISTOR-RESISTOR	1	
QR4801	MUN2211	TRANSISTOR-RESISTOR	1	
QR4802	MUN2212	TRANSISTOR-RESISTOR	1	
QR4803	MUN2211	TRANSISTOR-RESISTOR	1	
QR4804-06	MUN2213	TRANSISTOR-RESISTOR	3	
QR6008	MUN2213	TRANSISTOR-RESISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
QR6007, 08	MUN2212	TRANSISTOR-RESISTOR	2	
QR6009	MUN2113	TRANSISTOR-RESISTOR	1	
QR6011	MUN2212	TRANSISTOR-RESISTOR	1	
QR6022	UN2118	TRANSISTOR-RESISTOR	1	
QR6025	MUN2213	TRANSISTOR-RESISTOR	1	
QR6026	MUN2212	TRANSISTOR-RESISTOR	1	
QR6901	MUN2213	TRANSISTOR-RESISTOR	1	
QR6902	XN1211	TRANSISTOR-RESISTOR	1	
QR7901, 02	MUN2113	TRANSISTOR-RESISTOR	2	
QR7903-07	MUN2211	TRANSISTOR-RESISTOR	5	
QR7908	MUN2213	TRANSISTOR-RESISTOR	1	
QR7909	XN1214	TRANSISTOR-RESISTOR	1	
QR7917	MUN2211	TRANSISTOR-RESISTOR	1	
R1	ERJ8GEYJ274	M. RESISTOR CH 1/10W 270K	1	
R403, 04	ERJ8GEYG821	M. RESISTOR CH 1/10W 820	2	
R406	ERJ8GEYG681	M. RESISTOR CH 1/10W 680	1	
R407	ERJ6GEYJ112	M. RESISTOR CH 1/10W 1.1K	1	
R408	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R409	ERJ6GEYG183	M. RESISTOR CH 1/10W 18K	1	
R410	ERJ8GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R411	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R412	ERJ6GEYG303	M. RESISTOR CH 1/10W 30K	1	
R413	ERJ6GEYF822	M. RESISTOR CH 1/10W 8.2K	1	
R414	ERJ6GEYG105	M. RESISTOR CH 1/10W 1M	1	
R415	ERJ6GEYG163	M. RESISTOR CH 1/10W 16K	1	
R416	ERJ6GEYF393	M. RESISTOR CH 1/10W 39K	1	
R417	ERJ6GEYJ113	M. RESISTOR CH 1/10W 11K	1	
R418	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R420	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R421	ERJ6GEYF123	M. RESISTOR CH 1/10W 12K	1	
R422	ERJ6GEYG303	M. RESISTOR CH 1/10W 30K	1	
R423	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R424	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R425	ERJ6GEYG183	M. RESISTOR CH 1/10W 18K	1	
R426	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R427	ERJ6GEYJ112	M. RESISTOR CH 1/10W 1.1K	1	
R428	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R429	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R431	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R433	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R434	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R435	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R436	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R437	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R438	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R439	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R440	ERJ6GEYJ225	M. RESISTOR CH 1/10W 2.2M	1	
R441	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R442, 43	ERJ6GEYG182	M. RESISTOR CH 1/10W 1.8K	2	
R1001	ERJ6RBD272	M. RESISTOR CH 1/10W 2.7K	1	
R1002, 03	ERJ6RBD512	M. RESISTOR CH 1/10W 5.1K	2	
R1004	ERDS1TJ151	C. RESISTOR 1/2W 150	1	
R1005	ERDS2TJ472	C. RESISTOR 1/4W 4.7K	1	
R1006, 07	ERDS2TJ680	C. RESISTOR 1/4W 68	2	
R2001	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R2002	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R2003	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R2005	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R2007	ERJ6GEYG221	M. RESISTOR CH 1/10W 220	1	
R2011	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R2012	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R2013, 14	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R2015	ERJ6GEYG273	M. RESISTOR CH 1/10W 27K	1	
R2017	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R2018, 19	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R2021	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R2023	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R2024	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R2025	ERJ6GEYF123	M. RESISTOR CH 1/10W 12K	1	
R2026	ERJ6GEYJ244	M. RESISTOR CH 1/10W 240K	1	
R2501	ERJ6GEYJ684	M. RESISTOR CH 1/10W 680K	1	
R2502	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	1	
R2503	ERJ6GEYG133	M. RESISTOR CH 1/10W 13K	1	
R2504	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R2505	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R2506	ERJ6GEYG432	M. RESISTOR CH 1/10W 4.3K	1	
R2507	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R2508	ERDS1TJ561	C. RESISTOR 1/2W 560	1	
R2509-11	ERDS2TJ560	C. RESISTOR 1/4W 56	3	
R2512	ERX12SJR47	M. RESISTOR 1/2W 0.47	1	
R2513	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2514	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R2516	ERJ6GEYG105	M. RESISTOR CH 1/10W 1M	1	
R2517	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R2518	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R2519	ERJ6GEYG105	M. RESISTOR CH 1/10W 1M	1	
R2520	ERJ6GEYG392	M. RESISTOR CH 1/10W 3.9K	1	
R2521	ERJ6GEYG105	M. RESISTOR CH 1/10W 1M	1	
R2524	ERJ6GEYG392	M. RESISTOR CH 1/10W 3.9K	1	
R3001	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3002	ERJ6GEYG112	M. RESISTOR CH 1/10W 1.1K	1	
R3004	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3005	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R3006, 07	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	2	
R3008	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3009	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3010	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R3011	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3012	ERJ6GEYG122	M. RESISTOR CH 1/10W 1.2K	1	
R3013	ERJ6GEYG153	M. RESISTOR CH 1/10W 15K	1	
R3016, 17	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	2	
R3018	ERJ6GEYG182	M. RESISTOR CH 1/10W 1.8K	1	
R3019	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3020	ERJ6GEYG273	M. RESISTOR CH 1/10W 27K	1	
R3021	ERJ6GEYG391	M. RESISTOR CH 1/10W 390	1	
R3022	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3023	ERJ6GEYG911	M. RESISTOR CH 1/10W 910	1	
R3024	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R3025	ERJ6GEYG112	M. RESISTOR CH 1/10W 1.1K	1	
R3026	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3027	ERJ6GEYG183	M. RESISTOR CH 1/10W 18K	1	
R3029	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3030, 31	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	2	
R3032	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R3033, 34	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R3035	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3036	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R3037	ERJ6GEYG330	M. RESISTOR CH 1/10W 33	1	
R3043	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R3044	ERJ6GEYG474	M. RESISTOR CH 1/10W 470K	1	
R3045	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3046	ERJ6GEYG182	M. RESISTOR CH 1/10W 1.8K	1	
R3047	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R3048	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R3049	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R3050	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3051	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R3052-54	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	3	
R3101	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3102	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3103	ERJ6GEYG621	M. RESISTOR CH 1/10W 620	1	
R3104	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R3105	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3106	ERJ6GEYG391	M. RESISTOR CH 1/10W 390	1	
R3107	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R3108	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R3109	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3110	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R3111	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R3112	ERJ6GEYG182	M. RESISTOR CH 1/10W 1.8K	1	
R3113	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3114	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R3115	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R3116	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R3117, 18	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R3119	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	1	
R3120	ERJ6RBD472	M. RESISTOR CH 1/10W 4.7K	1	
R3122	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3123	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3124	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3125	ERJ6GEYG682	M. REISITOR CH 1/10W 6.8K	1	
R3127	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R3128	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R3129	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3130	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3131	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R3132	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R3133	ERJ6GEYF822	M. RESISTOR CH 1/10W 8.2K	1	
R3134, 35	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	2	
R3136	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3137	ERJ6GEYG271	M. RESISTOR CH 1/10W 270	1	
R3138	ERJ6GEYG621	M. RESISTOR CH 1/10W 620	1	
R3139	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	1	
R3140, 41	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R3142	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R3145	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R3147, 48	ERJ6GEYG330	M. RESISTOR CH 1/10W 33	2	
R3505	ERJ6GEYG122	M. RESISTOR CH 1/10W 1.2K	1	
R3506	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R3507	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R3508, 09	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R3510	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R3511	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3512-14	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	3	
R3515	ERJ6GEYF393	M. RESISTOR CH 1/10W 39K	1	
R3516	ERJ6GEYF822	M. RESISTOR CH 1/10W 8.2K	1	
R3517	ERJ6GEYF393	M. RESISTOR CH 1/10W 39K	1	
R3518	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R3519	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R3520	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R3521	ERJ6GEYG682	M. REISITOR CH 1/10W 6.8K	1	
R3801, 02	ERJ6GEYG391	M. RESISTOR CH 1/10W 390	2	
R3803, 04	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R3805	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R3806	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R3807	ERJ6GEYG682	M. REISITOR CH 1/10W 6.8K	1	
R3808, 09	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R3810	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R3811	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3812	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R3813	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R3814	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R3815	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R3816, 17	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	2	
R3801	ERJ6GEYG750	M. RESISTOR CH 1/10W 75	1	
R3803	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R3805	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R3807	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R3808	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R3809	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R3810, 11	ERJ6GEYG750	M. RESISTOR CH 1/10W 75	2	
R3812	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3813	ERJ6GEYG750	M. RESISTOR CH 1/10W 75	1	
R3814	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R3818	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3819	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R3821	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3822	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R3824	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3825	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R3828	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R3829	ERJ6GEYF822	M. RESISTOR CH 1/10W 8.2K	1	
R3830	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3831	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R3836	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R3837, 38	ERJ6GEYG750	M. RESISTOR CH 1/10W 75	2	
R3839	ERJ6GEYG392	M. RESISTOR CH 1/10W 3.9K	1	
R3840, 41	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R3842	ERJ6GEYG392	M. RESISTOR CH 1/10W 3.9K	1	
R3843, 44	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R3845	ERJ6GEYG392	M. RESISTOR CH 1/10W 3.9K	1	
R3846, 47	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R3848-50	ERJ6GEYG330	M. RESISTOR CH 1/10W 33	3	
R3874, 75	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R3876	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3877	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3883	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3884	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R3885	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R3886	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3887	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R3888, 89	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R3890	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R3891, 92	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R3893, 94	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	2	
R3895	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R3896	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R3897	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R3898	ERJ6GEYG823	M. RESISTOR CH 1/10W 82K	1	
R3899	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3900	ERJ6RBD153	M. RESISTOR CH 1/10W 15K	1	
R3901	ERJ6RBD392	M. RESISTOR CH 1/10W 3.9K	1	
R3902	ERJ6RBD683	M. RESISTOR CH 1/10W 68K	1	
R3903-13	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	11	
R3914	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R3915	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3916	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R3917-23	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	7	
R3924	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3925-30	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	6	
R3931	ERJ6GEYG220	M. RESISTOR CH 1/10W 22	1	
R3932	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R3933	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R3934, 35	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R3936	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R3937	ERJ6GEYG105	M. RESISTOR CH 1/10W 1M	1	
R3938-40	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	3	
R4001	ERJ6RBD123	M. RESISTOR CH 1/10W 12K	1	
R4002	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4003	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R4004	ERJ6GEYG392	M. RESISTOR CH 1/10W 3.9K	1	
R4005	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R4006	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R4007	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4008	ERJ6GEYG202	M. RESISTOR CH 1/10W 2K	1	
R4009	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R4010, 11	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	2	
R4012	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4013	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R4014	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4015	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R4016	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R4017	ERJ6GEYG122	M. RESISTOR CH 1/10W 1.2K	1	
R4018	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4019, 20	ERJ6GEYG121	M. RESISTOR CH 1/10W 120	2	
R4021	ERJ6GEYJ334	M. RESISTOR CH 1/10W 330K	1	
R4022	ERJ6GEYG682	M. REISITOR CH 1/10W 6.8K	1	
R4023	ERJ6GEYG243	M. RESISTOR CH 1/10W 24K	1	
R4024	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R4025	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R4026	ERJ6GEYG153	M. RESISTOR CH 1/10W 15K	1	
R4027	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4028, 29	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	2	
R4030	ERJ6GEYG243	M. RESISTOR CH 1/10W 24K	1	
R4031	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R4032	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4033	ERJ6GEYG243	M. RESISTOR CH 1/10W 24K	1	
R4034	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R4035	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4036	ERJ6GEYG243	M. RESISTOR CH 1/10W 24K	1	
R4037	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R4038	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4039	ERJ6GEYG243	M. RESISTOR CH 1/10W 24K	1	
R4040	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R4041	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4042	ERJ6GEYG243	M. RESISTOR CH 1/10W 24K	1	
R4043	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R4044	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4045, 46	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R4047, 48	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R4049	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4050	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4051, 52	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	2	
R4053, 54	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R4055, 56	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	2	
R4057-59	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	3	
R4060	ERJ6GEYG563	M. RESISTOR CH 1/10W 56K	1	
R4061	ERDS2TJ103	C. RESISTOR 1/4W 10K	1	
R4501, 02	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	2	
R4503, 04	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	2	
R4505	ERJ6GEYG470	M. RESISTOR CH 1/10W 47	1	
R4506	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R4507	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4508	ERJ6GEYG470	M. RESISTOR CH 1/10W 47	1	
R4509	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R4510	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4511	ERJ6GEYG563	M. RESISTOR CH 1/10W 56K	1	
R4512	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R4513	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4514, 15	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	2	
R4516	ERJ6GEYG182	M. RESISTOR CH 1/10W 1.8K	1	
R4517, 18	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	2	
R4519	ERJ6GEYG182	M. RESISTOR CH 1/10W 1.8K	1	
R4520	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R4521	ERJ6GEYG182	M. RESISTOR CH 1/10W 1.8K	1	
R4522	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R4523	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R4524	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4525	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R4526	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R4527, 28	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	2	
R4529	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R4530	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R4531	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4801	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R4802	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	1	
R4803	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R4804, 05	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R4806	ERJ6GEYJ100	M. RESISTOR CH 1/10W 10	1	
R4807	ERJ6GEYG153	M. RESISTOR CH 1/10W 15K	1	
R4808	ERJ6GEYF123	M. RESISTOR CH 1/10W 12K	1	
R4809	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R4810, 11	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	2	
R4812, 13	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R4814	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R4815	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R4816, 17	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	2	
R6001	ERDS1TJ472	C. RESISTOR 1/2W 4.7K	1	
R6006-08	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	3	
R6011	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R6012	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R6016, 17	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R6019	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R6020, 21	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	2	
R6022	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R6023	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6024	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R6025	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R6026	ERJ6GEYG273	M. RESISTOR CH 1/10W 27K	1	
R6027	ERJ6GEYG682	M. REISITOR CH 1/10W 6.8K	1	
R6028	ERJ6GEYG183	M. RESISTOR CH 1/10W 18K	1	
R6031	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6032	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	1	
R6033-35	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	3	
R6036-40	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	5	
R6041	ERJ6GEYG201	M. RESISTOR CH 1/10W 200	1	
R6042	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	1	
R6043, 44	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R6045	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R6046	ERDS2TJ102	C. RESISTOR 1/4W 1K	1	
R6047	ERJ6GEYG271	M. RESISTOR CH 1/10W 270	1	
R6048, 49	ERJ6GEYG683	M. RESISTOR CH 1/10W 68K	2	
R6050	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6051, 52	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R6053, 54	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R6055, 56	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R6058, 59	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R6080	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R6081	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6082	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R6083, 84	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R6086	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6087	ERJ6GEYF822	M. RESISTOR CH 1/10W 8.2K	1	
R6088, 89	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R6072	ERJ6GEYG221	M. RESISTOR CH 1/10W 220	1	
R6076	ERJ6GEYG221	M. RESISTOR CH 1/10W 220	1	
R6077, 78	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	2	
R6079	ERJ6GEYG470	M. RESISTOR CH 1/10W 47	1	
R6080, 81	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	2	
R6082	ERJ6GEYG221	M. RESISTOR CH 1/10W 220	1	
R6083	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6084	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R6086	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R6087	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R6088	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R6089	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R6091-93	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	3	
R6094	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R6096	ERDS2TJ152	C. RESISTOR 1/4W 1.5K	1	
R6103	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6104	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R6105	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R6108	ERJ6GEYG682	M. REISITOR CH 1/10W 6.8K	1	
R6109	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6110	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	1	
R6113	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6115	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R6116	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R6117	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R6131	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R6137	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R8901	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R8902	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R8914	ERJ6GEYF333	M. RESISTOR CH 1/10W 33K	1	
R8915	ERJ6GEYG913	M. RESISTOR CH 1/10W 91K	1	
R8916	ERJ6GEYG512	M. RESISTOR CH 1/10W 5.1K	1	
R8917, 18	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	2	
R8919	ERX1SJ1R8	M. RESISTOR 1W 1.8	1	
R8920	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R8921	ERJ6RBD122	M. RESISTOR CH 1/10W 1.2K	1	
R8922	ERJ6RHD9760	抵抗	1	
R8923	ERJ6RBD751	M. RESISTOR CH 1/10W 750	1	
R7901	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R7903, 04	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	2	
R7912	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R7918	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R7919	ERJ6GEYG562	M. RESISTOR CH 1/10W 5.6K	1	
R7920-26	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	7	
R7928-31	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	4	
R7932-34	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	3	
R7941	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R7944, 45	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	2	
R7946	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
SW3871	VSS023706	SWITCH	1	
SW3872, 73	VSS0216	SWITCH	2	
SW7901	VSS0112	SWITCH	1	
T4801	EIQ7QF013Q	COIL 1000UH	1	
T6901	EIQ7QF012Q	COIL 100UH	1	
VR401	EVM7JGA00B24	V. RESISTOR 20K	1	
VR402	EVM7JGA00B14	V. RESISTOR 10K	1	
VR403	EVM7JGA00B54	V. RESISTOR 50K	1	
VR405	EVM7JGA00B14	V. RESISTOR 10K	1	
VR406	EVM7JGA00B54	V. RESISTOR 50K	1	
VR407	EVM7JGA00B24	V. RESISTOR 20K	1	
VR2001	EVMF6SA00B54	V. RESISTOR 50K	1	
VR2018, 19	EVMF6SA00B54	V. RESISTOR 50K	2	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
VR3001	EVMF6SA00B14	V. RESISTOR 10K	1	
VR3002	EVMF6SA00B24	V. RESISTOR 20K	1	
VR3003	EVMF6SA00B23	V. RESISTOR 2K	1	
VR3006, 07	EVMF6SA00B23	V. RESISTOR 2K	2	
VR3101	EVMEASA00B54	V. RESISTOR 500K	1	
VR3503	EVMEASA00B23	V. RESISTOR 2K	1	
VR3601	EVMEGSA00B23	V. RESISTOR 2K	1	
VR4801	EVMF6SA00B14	V. RESISTOR 10K	1	
VR4802	EVMF6SA00B25	V. RESISTOR 200K	1	
VR4803, 04	EVMF6SA00B13	V. RESISTOR 1K	2	
W5	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
W9 02	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
W22-34	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	13	
X3871	VSX0461	CRYSTAL OSCILLATOR	1	
X6001	VSX0583	CRYSTAL OSCILLATOR	1	
X7901	VSQ0824	BUZZER	1	
		MISCELLANEOUS		
	VJF1031	CLAMPER	1	
	VJF1056	HANESS LIFTER	3	
	VMA6768	EARTH ANGLE	2	
	VEE9318	CABLE	1	P2001～P2902
	VEE9319	CABLE	1	P4807～P4809
	VEE9320	CABLE	1	P2002～P4811
	VEE9321	CABLE	1	P6901～FE HEAD
	VEE9322	CABLE	1	P2502～POWER TR
	VEE9323	CABLE	1	P7901～P6852
	VEE9325	CABLE	1	P4813～P6870
	VEE9327	CABLE	1	P6004～P1002
	VWJ0935	FLEXIBLE CABLE	1	P3001～P501
	VWJ0936	FLEXIBLE CABLE	1	P4812～P551
	VWJ0937	FLEXIBLE CABLE	1	P2501～P1507
	VWJ16AW130M1	FLEXIBLE CABLE	1	P7902～P6502
	VWJ18AW170M1	FLEXIBLE CABLE	1	P7903～P6503
	VJF1158	CLAMPER	5	
	XWA26B	WASHER	2	
E10	VMG0400	P. C. BOARD RUBBER	2	
E11	XTV3+10G	SCREW	4	
E12	VJH1035	ANNTENA TERMINAL	1	
E13	VJH1038	JACK PANEL	1	
E14	VJH1037	JACK HOLDER	1	
E15	VMP5647	EARTH ANGLE	1	
E16	VMP5648	D-SUB ANGLE	1	
E17	XTN3+10JFZ	SCREW	12	
E18	XYN3+C8FZ	SCREW	2	
E19	VHD1124	SCREW	2	
■ E2	VEP03D51A	Y/C PACK C. B. A.	1	(RTL)
■	VEP00Z16A	Y/C SUB C. B. A.	1	(RTL) FOR VEP03D51A
■	VEP03B48C	SUB VIDEO C. B. A.	1	(RTL) FOR VEP03D51A
■	VEP03D52A	DIGITAL SUB C. B. A.	1	(RTL) FOR VEP03D51A
C1	ECUX1H150JUN	C. CAPACITOR CH 50V 15P	1	
C3702	ECUX1C333KBV	C. CAPACITOR CH 16V 0.033U	1	
C3703	ECUX1C473ZFV	C. CAPACITOR CH 16V 0.047U	1	
C3704	ECUX1H222KBV	C. CAPACITOR CH 50V 2200P	1	
C3705	ECUX1H821JCV	C. CAPACITOR CH 50V 820P	1	
C3706	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C3708	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
C3709-11	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	3	
C3712	ECUX1H150JCV	C. CAPACITOR CH 50V 15P	1	
C3713	ECUX1H221GCV	C. CAPACITOR CH 50V 220P	1	
C3714	ECUX1H471GCV	C. CAPACITOR CH 50V 470P	1	
C3715-17	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	3	
C30003	ECQB1H103JF	P. CAPACITOR 50V 0.01U	1	
C30004	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C30005	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C30006	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C30007	ECUX1E223KBV	C. CAPACITOR CH 25V 0.023U	1	
C30008	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C30009	ECEA1HKA3R3	E. CAPACITOR 50V 3.3U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C30010	ECEV1CV100Q	E. CAPACITOR CH 16V 10U	1	
C30011	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C30012	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C30013	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C30014	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C30015	ECEV1EV4R7Q	E. CAPACITOR CH 25V 4.7U	1	
C30019	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C30020	ECEA1CKA100	E. CAPACITOR 16V 10U	1	
C30025	ECUX1C684KBM	C. CAPACITOR CH 16V 0.68U	1	
C30026	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C30027	ECEV1HV010Q	E. CAPACITOR CH 50V 1U	1	
C30028	ECUX1H560GCV	C. CAPACITOR CH 50V 56P	1	
C30030	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C30031	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C30032	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C30033	ECEV1EV4R7Q	E. CAPACITOR CH 25V 4.7U	1	
C30034	ECUX1H331JCV	C. CAPACITOR CH 50V 330P	1	
C30036	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
C30037	ECEA1HKAR22	E. CAPACITOR 50V 0.22U	1	
C30038	ECUX1H472KBV	C. CAPACITOR CH 50V 4700P	1	
C30039	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C30040	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C30041, 42	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	2	
C30045	ECUX1H330JCV	C. CAPACITOR CH 50V 33P	1	
C30046	ECUX1H680JCV	C. CAPACITOR CH 50V 68P	1	
C30047	ECUX1E681JCV	C. CAPACITOR CH 25V 680P	1	
C30048, 49	ECUX1C473KBV	C. CAPACITOR CH 16V 0.047U	2	
C30050, 51	ECUX1H151JCV	C. CAPACITOR CH 50V 150P	2	
C30052-54	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	3	
C30055	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C30058	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C30059	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C30060	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C30061	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C30062	ECEV1CV220Q	E. CAPACITOR CH 16V 22U	1	
C30063	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C30067	ECUX1H150JCV	C. CAPACITOR CH 50V 15P	1	
C30068	ECUX1H220JCV	C. CAPACITOR CH 50V 22P	1	
C30069	ECUX1H470JCV	C. CAPACITOR CH 50V 47P	1	
C30070	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C30071, 72	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	2	
C30073	ECUM1C105ZFN	C. CAPACITOR CH 16V 1U	1	
C33001	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33002	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C33003	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33004	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C33005	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33006	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C33007	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33008	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C33009	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33010	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C33011	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33012	ECEA0JKA101	E. CAPACITOR 6.3V 100U	1	
C33013, 14	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	2	
C33015	ECUX1H222KBV	C. CAPACITOR CH 50V 2200P	1	
C33016	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C33017	ECEV1CV100Q	E. CAPACITOR CH 16V 10U	1	
C33018	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33019	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C33020	ECEV1CV100Q	E. CAPACITOR CH 16V 10U	1	
C33021	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33022	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C33023-26	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	4	
C33027	ECEV1HV010Q	E. CAPACITOR CH 50V 1U	1	
C33028	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33029	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C33030	ECEV1CV100Q	E. CAPACITOR CH 16V 10U	1	
C33031	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33032	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C33033	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C33034	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33035	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C33036	ECEV1CV100Q	E. CAPACITOR CH 16V 10U	1	
C33037	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C33039-41	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	3	
C33043, 44	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	2	
C33045	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C33046-49	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	4	
C33054-57	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	4	
C33058, 59	ECUX1H680JCV	C. CAPACITOR CH 50V 68P	2	
C33060	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C33069, 70	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	2	
C33072	ECEV1CV100Q	E. CAPACITOR CH 16V 10U	1	
C33073	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C33074	ECUX1H102KBV	C. CAPACITOR CH 50V 1000P	1	
C33075, 76	ECUX1H562KBV	C. CAPACITOR CH 50V 5600P	2	
C33077	ECUX1H100DCV	C. CAPACITOR CH 50V 10P	1	
C34001-08	ECUX1H680JCV	C. CAPACITOR CH 50V 68P	8	
C34009-12	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	4	
C36001	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	1	
C36003	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C36011	ECEV0JV470Q	E. CAPACITOR CH6.3V 47U	1	
C36012, 13	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	2	
C36014, 15	ECUX1C104ZFV	C. CAPACITOR CH 16V 0.1U	2	
C36016	ECEV0JV220Q	E. CAPACITOR CH6.3V 22U	1	
C36017	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C36018	ECQB1H473JF	P. CAPACITOR 50V 0.047U	1	
C36019	ECUX1H103KBV	C. CAPACITOR CH 50V 0.01U	1	
C36020	ECUM1C105ZFN	C. CAPACITOR CH 16V 1U	1	
C36021	ECUX1H103ZFV	C. CAPACITOR CH 50V 0.01U	1	
C36022	ECQV1H683JM	P. CAPACITOR 50V 0.068U	1	
D3701	MA141K	DIODE	1	
D30003	MA141K	DIODE	1	
D30005	MA141WA	DIODE	1	
D30006	MA141K	DIODE	1	
D33001	MA141K	DIODE	1	
FL30001	ELB4R057	FILTER	1	
FL30002	ELB3H016	FILTER	1	
FL33001	VLF1016A103	FILTER	1	
FL33002, 03	VLF1016A101	FILTER	2	
FL33004	VLF1016A470	FILTER	1	
FL33005-08	VLF1016A103	FILTER	4	
FL33009	VLF1016A101	FILTER	1	
FL33010	VLF1016A103	FILTER	1	
FL33011	VLF1016A470	FILTER	1	
FL33012	VLF1016A103	FILTER	1	
FL33013	VLF1016A470	FILTER	1	
FL33015-18	VLF1016A470	FILTER	4	
FL33020	VLF1016A103	FILTER	1	
FL33021, 22	VLF1016A101	FILTER	2	
FL33023	VLF1016A103	FILTER	1	
FL33024	VLF1016A101	FILTER	1	
IC3701	AN3250FAP	IC	1	
IC30001	M52373AFP	IC	1	
IC30002	TC4W66F	IC	1	
IC33001	ST24C01FM6	IC	1	
IC33002	SC371024CFU	IC	1	
IC33003	MN6715	IC	1	
IC33004	SC371026FU	IC	1	
IC33005	L7A1368	IC	1	
IC33006	MN53040VRX	IC	1	
IC33010	NN4792FBP	IC	1	
IC33011	TC7S04F	IC	1	
IC33012	TC7W02F	IC	1	
IC33014	UPD4538BG	IC	1	
IC34001, 02	UPD42280G3	IC	2	
IC36001	UPD74HC4053G	IC	1	
IC36002	M34225M1583	IC	1	
IC36005	RH5VL44AA	IC	1	
IC36006	UPD4538BG	IC	1	
K33001	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
K34001	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
L30001	VLQ0599J680	COIL 68UH	1	
L30005	VLQ0163G150	COIL 15UH	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
L30008	VLQ0599J680	COIL 68UH	1	
L30007	VLP0198	COIL	1	
L30008	VLQ0163J680	COIL 68UH	1	
L30009	VLQ0599J391	COIL 390UH	1	
L30010	VLQ0599J471	COIL 470UH	1	
L30011	VLQ0599J680	COIL 68UH	1	
L30014	VLQ0599J680	COIL 68UH	1	
L30015	VLQ0163J220	COIL 22UH	1	
L30016	VLQ0163J101	COIL 100UH	1	
L30017	VLQ0163J151	COIL 150UH	1	
L30018	VLP0196	COIL	1	
L33001-04	VLP0192	COIL	4	
L33005-09	VLP0196	COIL	5	
L33010	VLP0197	COIL	1	
L33011	VLF1147A680	COIL	1	
L33012	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
L33013	VLP0197	COIL	1	
L33014	VLP0146	COIL	1	
L36002	VLQ0599J680	COIL 68UH	1	
PP3701	VJP3126B024	CONNECTOR (MALE)	1	
PP34001	VJP3888A030	CONNECTOR (MALE)	1	
PP36001	VJP3888A030	CONNECTOR (MALE)	1	
PS30001	VJS3042F016W	CONNECTOR (FEMALE)	1	
PS30002	VJS3042F020W	CONNECTOR (FEMALE)	1	
PS30003	VJS2961C024	CONNECTOR (FEMALE)	1	
PS30004	VJS3042B008W	CONNECTOR (FEMALE)	1	
PS33001, 02	VJS3819A030	CONNECTOR (FEMALE)	2	
Q3703, 04	2SB1218	TRANSISTOR	2	
Q3705	XN1501	TRANSISTOR-RESISTOR	1	
Q30001	2SB1218	TRANSISTOR	1	
Q30002	2SA1532	TRANSISTOR	1	
Q30004	2SC3930	TRANSISTOR	1	
Q30005-08	2SD1819	TRANSISTOR	4	
Q30009	2SC3930	TRANSISTOR	1	
Q30010, 11	2SD1819	TRANSISTOR	2	
Q30012	2SC3930	TRANSISTOR	1	
Q30013	2SA1532	TRANSISTOR	1	
Q30015, 16	2SB1218	TRANSISTOR	2	
Q30017, 18	2SD1819	TRANSISTOR	2	
Q33001	2SD1819	TRANSISTOR	1	
Q33002	2SA1532	TRANSISTOR	1	
Q33003-06	2SB1218	TRANSISTOR	4	
Q36001	XN1501	TRANSISTOR-RESISTOR	1	
Q36002, 03	2SB1218	TRANSISTOR	2	
QR3701	UN5213	TRANSISTOR-RESISTOR	1	
QR30002-04	UN5213	TRANSISTOR-RESISTOR	3	
QR30005	UN5212	TRANSISTOR-RESISTOR	1	
QR30006, 07	UN5213	TRANSISTOR-RESISTOR	2	
QR33003	UN5213	TRANSISTOR-RESISTOR	1	
QR33004, 05	UN5113	TRANSISTOR-RESISTOR	2	
QR33008	XN1213	TRANSISTOR-RESISTOR	1	
QR33009-11	UN5113	TRANSISTOR-RESISTOR	3	
QR36001	UN5211	TRANSISTOR-RESISTOR	1	
QR36002, 03	XN1213	TRANSISTOR-RESISTOR	2	
QR36004	UN5113	TRANSISTOR-RESISTOR	1	
R3703	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R3704	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3706	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R3708	ERJ3GEYJ182	M. RESISTOR CH 1/16W 1.8K	1	
R3709	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3710	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R3711	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R3712	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R3713	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R3714, 15	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	2	
R3716	ERJ3GEYG682	M. RESISTOR CH 1/16W 6.8K	1	
R3717	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R3718	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1.2K	1	
R3719	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R3720	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1.2K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R3721	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5.6K	1	
R3722	ERJ3RBD122	M. RESISTOR CH 3W 1.2K	1	
R3723	ERJ3RBD152	M. RESISTOR CH 3W 1.5K	1	
R3724	ERJ3RBD391	M. RESISTOR CH 3W 390	1	
R30001	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R30002	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R30003	ERJ3GEYG472	M. RESISTOR CH 1/16W 4.7K	1	
R30004	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R30005	ERJ3RBD102	M. RESISTOR CH 1/10W 1K	1	
R30006	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R30007	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R30008	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R30018	ERJ3RBD561	M. RESISTOR CH 3W 560	1	
R30019	ERJ3GEYG822	M. RESISTOR CH 1/16W 8.2K	1	
R30020-22	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	3	
R30023	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R30024	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R30025	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1.2K	1	
R30026	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R30027, 28	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	2	
R30029	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R30030	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R30031	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R30032	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R30033	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R30034	ERJ3GEYJ151	M. RESISTOR CH 1/16W 150	1	
R30035	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R30036, 37	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	2	
R30038	ERJ3GEYJ681	M. RESISTOR CH 1/16W 680	1	
R30039	ERJ3GEYJ273	M. RESISTOR CH 1/16W 27K	1	
R30040	ERJ3GEYG682	M. RESISTOR CH 1/16W 6.8K	1	
R30041	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R30042	ERJ3GEYJ273	M. RESISTOR CH 1/16W 27K	1	
R30043	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R30044	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R30048	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R30049	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R30050	ERJ3GEYJ183	M. RESISTOR CH 1/16W 18K	1	
R30052	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R30053	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R30054	ERJ3GEYJ821	M. RESISTOR CH 1/16W 820	1	
R30055	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R30056	ERJ3GEYJ824	M. RESISTOR CH 1/16W 820K	1	
R30060	ERJ3GEYK395	M. RESISTOR CH 1/16W 3.9M	1	
R30061	ERJ3GEYJ123	M. RESISTOR CH 1/16W 12K	1	
R30062	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R30063	ERJ3GEYJ392	M. RESISTOR CH 1/16W 3.9K	1	
R30064	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R30065	ERJ3GEYJ113	M. RESISTOR CH 1/16W 11K	1	
R30066	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	
R30067	ERJ3GEYG682	M. RESISTOR CH 1/16W 6.8K	1	
R30068	ERJ3GEYJ105	M. RESISTOR CH 1/16W 1M	1	
R30069	ERJ3GEYK225	M. RESISTOR CH 1/16W 2.2M	1	
R30070	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R30071	ERJ3GEYG472	M. RESISTOR CH 1/16W 4.7K	1	
R30072	ERJ3GEYJ393	M. RESISTOR CH 1/16W 39K	1	
R30073	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R30074	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R30075	ERJ3GEYJ392	M. RESISTOR CH 1/16W 3.9K	1	
R30076	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R30080	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R30082	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R30083	ERJ3GEYK225	M. RESISTOR CH 1/16W 2.2M	1	
R33001-13	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	13	
R33014	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R33015-18	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	4	
R33020-23	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	4	
R33024	ERJ3GEYJ183	M. RESISTOR CH 1/16W 18K	1	
R33025	ERJ3GEYJ273	M. RESISTOR CH 1/16W 27K	1	
R33026-34	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	9	
R33035	ERJ3GEYJ912	M. RESISTOR CH 1/16W 9.1K	1	
R33036	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R33037, 38	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	2	
R33039	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R33040	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R33041	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R33042-46	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	5	
R33047	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R33048	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	
R33049	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R33050	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	
R33051-54	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	4	
R33055	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R33056	ERJ3GEYG472	M. RESISTOR CH 1/16W 4.7K	1	
R33057, 58	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	2	
R33059	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	
R33060	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R33061	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R33062	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R33063	ERJ3GEYJ224	M. RESISTOR CH 1/16W 220K	1	
R33064	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R33065	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1.2K	1	
R33066	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R33067	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R33068	ERJ3GEYJ182	M. RESISTOR CH 1/16W 1.8K	1	
R33069	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	
R33070	ERJ3GEYJ183	M. RESISTOR CH 1/16W 18K	1	
R33071	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R33072	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R33073	ERJ3GEYJ221	M. RESISTOR CH 1/16W 220	1	
R33074, 75	ERJ3GEYJ122	M. RESISTOR CH 1/16W 1.2K	2	
R33076	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R33077	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5.6K	1	
R33078	ERJ3GEYJ221	M. RESISTOR CH 1/16W 220	1	
R33079	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R33096	ERJ3GEYJ273	M. RESISTOR CH 1/16W 27K	1	
R33109	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R33111	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R33112	ERJ3GEYJ182	M. RESISTOR CH 1/16W 1.8K	1	
R33113	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R33114	ERJ3GEYJ182	M. RESISTOR CH 1/16W 1.8K	1	
R33118	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R33124	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R33125	ERJ3GEYJ154	M. RESISTOR CH 1/16W 150K	1	
R33126, 27	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	2	
R33129	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R33130	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R33131	ERJ3GEYJ274	M. RESISTOR CH 1/16W 270K	1	
R33132	ERJ3GEYJ393	M. RESISTOR CH 1/16W 39K	1	
R33133	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R33134	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R33136, 37	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	2	
R34001-08	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	8	
R34009-16	ERJ3GEYJ182	M. RESISTOR CH 1/16W 1.8K	8	
R36001	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R36003	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R36004	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R36007-10	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	4	
R36011-13	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	3	
R36014	ERJ3RBD104	M. RESISTOR CH 3W 100K	1	
R36015	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R36016	ERJ3RBD104	M. RESISTOR CH 3W 100K	1	
R36017, 18	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	2	
R36019, 20	ERJ3GEYJ183	M. RESISTOR CH 1/16W 18K	2	
R36021	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R36022	ERJ3GEYJ183	M. RESISTOR CH 1/16W 18K	1	
R36023-25	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	3	
R36026	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R36027	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R36028	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
VC1	VCV0047	TRIMMER	1	
VR30002	EVM7JGA00B24	V. RESISTOR 20K	1	
VR30003, 04	EVM7JGA00B14	V. RESISTOR 10K	2	
VR30005	EVMEGSA00B14	V. RESISTOR 10K	1	
VR30006	EVMEGSA00B53	V. RESISTOR 5K	1	
X1	VSX0658	CRYSTAL OSCILLATOR	1	
X36001	VSX0258	CRYSTAL OSCILLATOR	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
		MISCELLANEOUS		
	VMX2372	SPACER	1	
	VMT0077	SPONGE MAT	1	
E30	VXA5305	SHIELD CASE	1	
E31	VSC4087	SHIELD CASE (A)	1	
E32	XTV3+6F	SCREW	3	
E33	VMT0076	RUBBER CUSHION	1	
■ E3	VEP06A08A	FRONT VR C.B.A.	1	(RTL)
■	VEP00V50A	HP/MIC C.B.A.	1	(RTL) FOR VEP06A06A
C6751, 52	ECKF1H152KB	C. CAPACITOR 50V 1500P	2	
C6870	ECQV1H124JM	P. CAPACITOR 50V 0.12U	1	
C6871	ECKF1H103ZF	C. CAPACITOR 50V 0.01U	1	
C6872	ECQV1H124JM	P. CAPACITOR 50V 0.12U	1	
C6874	ECEA1CKS330	E. CAPACITOR 16V 33U	1	
C6875	ECEA1EKS3R3	E. CAPACITOR 25V 3.3U	1	
C6876	VCEA1HAC3R3	E. CAPACITOR 50V 3.3U	1	
C6877	ECEA1AKS330	E. CAPACITOR 10V 33U	1	
D6851, 52	MA165	DIODE	2	
IC6870	VCR0172	IC	1	
J6751	VJJ0238	MIC JACK	1	
J6752	VJJ0210	JUMPER	1	
LD6851	LN81RCPHLULS	LED	1	
P6851	VJP1248T	CONNECTOR (MALE) 6P	1	
P6852	VJP3093	CONNECTOR (MALE)	1	
P6853	VJP3264A015	CONNECTOR (MALE)	1	
P6870	VJP3091	CONNECTOR (MALE)	1	
PJ6751	VWJC7ZW018LL		1	
R6851, 52	ERDS2TJ332	C. RESISTOR 1/4W 3.3K	2	
R6853	ERDS2TJ271	C. RESISTOR 1/4W 270	1	
R6870	ERDS2TJ222	C. RESISTOR 1/4W 2.2K	1	
R6873, 74	ERDS2T0	C. RESISTOR 1/4W 0	2	
R6878	ERDS2T0	C. RESISTOR 1/4W 0	1	
R6879	ERDS2T0	C. RESISTOR 1/4W 0	1	
SW6851	EVQ11407K	SWITCH	1	
SW6852, 53	ESD172212	SWITCH	2	
SW6855	VSP0881	SWITCH	1	
SW6856	ESD172312	SWITCH	1	
VR6870	EWAKFKXB3B24	V. RESISTOR 20K	1	
VR6871	EWAKABXB3C23	V. RESISTOR 2K	1	
VR6872	EWANYJX0554J	V. RESISTOR 550K	1	
		MISCELLANEOUS		
	VJF0691	JACK HOLDER	1	
	VYC0160	REC VR PANEL	1	
E29	KL04	LED HOLDER	1	
E28	VGU4495	REC VR KNOB	2	
■ E4	VEP07800B	TIMER C.B.A.	1	(RTL)
C6501	ECEA1HKA100	E. CAPACITOR 50V 10U	1	
C6502	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C6503	ECEA0JKS330	E. CAPACITOR 6.3V 33U	1	
C6504	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C6505	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C6506, 07	ECEA1EKS4R7	E. CAPACITOR 25V 4.7U	2	
C6508, 09	ECQB1H473JF	P. CAPACITOR 50V 0.047U	2	
C6510	ECEA0JKA221	E. CAPACITOR 6.3V 220U	1	
C6511	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C6512	ECUM1H090DCN	C. CAPACITOR CH 50V 9P	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
C6513	ECRHA030E41	TRIMMER	1	
C6514	ECUM1H330JCN	C. CAPACITOR CH 50V 33P	1	
C6515	ECUM1H220JCN	C. CAPACITOR CH 50V 22P	1	
C6516, 17	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	2	
C6518	ECUM1H560JCN	C. CAPACITOR CH 50V 56P	1	
C6521	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C6522	ECEA0JKS470	E. CAPACITOR 6.3V 47U	1	
C6524	ECEA1CKA101	E. CAPACITOR 16V 100U	1	
C6525	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C6526	ECA0JM221	E. CAPACITOR 6.3V 220U	1	
C6527	ECUM1H223ZFN	C. CAPACITOR CH 50V 0.022U	1	
C6528	ECEA1VKA100	E. CAPACITOR 35V 10U	1	
C6529	ECEA1CKA220	E. CAPACITOR 16V 22U	1	
C6530-47	ECUM1H270JCN	C. CAPACITOR CH 50V 27P	18	
C6548	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C6549	ECKF1H102KB	C. CAPACITOR 50V 1000P	1	
C6549 02	ECUM1H103KBN	C. CAPACITOR CH 50V 0.01U	1	
C6601	ECQV1H104JM	P. CAPACITOR 50V 0.1U	1	
D6501	MA4068-M	DIODE	1	
D6502	MA151A	DIODE	1	
D6504	ERA22-02	DIODE	1	
D6505, 06	MA185	DIODE	2	
D6507	MA4091-L	DIODE	1	
D6509-28	MA151A	DIODE	20	
D6529	MA151WA	DIODE	1	
D6531	MA151WA	DIODE	1	
DP6501	VSL0347	DISPLAY	1	
IC6502	BA6810S	IC	1	
IC6503	MN187324SA	IC	1	
IC6504	M6M80011AP	IC	1	
IC6506	MN1382-K	IC	1	
IC6507	MN1382-S	IC	1	
L6502, 03	VLQ0599J101	COIL 100UH	2	
L6504	VLP0083	COIL	1	
LD6504, 05	LN28RCPL	DIODE	2	
LD6506	LN48YCPL	DIODE	1	
LD6507	VLL0062	LED	1	
P6501	VJP3284A020	CONNECTOR (MALE)	1	
P6502	VJS3537F016G	CONNECTOR (FEMALE)	1	
P6503	VJS3537F018G	CONNECTOR (FEMALE)	1	
P6504	VJP1233T	CONNECTOR (MALE) 6P	1	
P6505	VJP2621	CONNECTOR (MALE)	1	
Q6501	2SD2133	TRANSISTOR	1	
QR6501, 02	MUN2112	TRANSISTOR-RESISTOR	2	
QR6503	MUN2111	TRANSISTOR-RESISTOR	1	
QR6504	MUN2213	TRANSISTOR-RESISTOR	1	
QR6505-08	MUN2113	TRANSISTOR-RESISTOR	4	
QR6509-11	MUN2111	TRANSISTOR-RESISTOR	3	
R6501	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	1	
R6505-08	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	4	
R6520	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R6521	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R6522	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
R6523	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6524-26	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	3	
R6527	ERJ6GEYG272	M. RESISTOR CH 1/10W 2.7K	1	
R6528	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R6529	ERJ6GEYG122	M. RESISTOR CH 1/10W 1.2K	1	
R6530	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R6531, 32	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	2	
R6533	ERJ6GEYG221	M. RESISTOR CH 1/10W 220	1	
R6534	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R6535-38	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	4	
R6539, 40	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	2	
R6541	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R6542	ERJ6GEYG683	M. RESISTOR CH 1/10W 68K	1	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
R6544	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R6545	ERDS1TJ3R9	C. RESISTOR 1/2W 3.9	1	
R6546	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R6547	ERJ6GEYG102	M. RESISTOR CH 1/10W 1K	1	
R6548-52	ERJ6GEYF822	M. RESISTOR CH 1/10W 8.2K	5	
R6553	ERJ6GEYG392	M. RESISTOR CH 1/10W 3.9K	1	
R6554, 55	ERJ6GEYF822	M. RESISTOR CH 1/10W 8.2K	2	
R6556, 57	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	2	
R6558-64	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	7	
R6566-68	ERJ6GEYG181	M. RESISTOR CH 1/10W 180	3	
R6569	ERJ6GEYG390	M. RESISTOR CH 1/10W 39	1	
R6570-73	ERJ6GEYG683	M. RESISTOR CH 1/10W 68K	4	
R6575-77	ERJ6GEYG683	M. RESISTOR CH 1/10W 68K	3	
R6578-82	ERJ6GEYF473	M. RESISTOR CH 1/10W 47K	5	
R6586	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6589	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	1	
R6592	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	1	
R6593-95	ERJ6GEYG103	M. RESISTOR CH 1/10W 10K	3	
R6596, 97	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	2	
R6598	ERJ6GEYG682	M. REISITOR CH 1/10W 6.8K	1	
R6600, 01	ERJ6GEYG332	M. RESISTOR CH 1/10W 3.3K	2	
R6602	ERJ6GEYG683	M. RESISTOR CH 1/10W 68K	1	
R6610, 11	ERJ8GEY0R00	M. RESISTOR CH 1/10W 0	2	
R6620-36	ERJ6GEYG104	M. RESISTOR CH 1/10W 100K	17	
T6501	ETE13K91AY	TRANSFORMER	1	
VR8501	EVNDXAA00B53	V. RESISTOR 5K	1	
X6501	VSX0797	CRYSTAL OSCILLATOR	1	
X6502	VSX0094C	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
	VJF0693	FIP HOLDER	1	
	VJF0740	LED HOLDER	1	
■ E5	VEP05202H	HEAD AMP C.B.A.	1	(RTL)
C501	ECEA1CKA220	E. CAPACITOR 16V 22U	1	
C502	ECEA0JKA470	E. CAPACITOR 6.3V 47U	1	
C503	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C504	ECUM1C105ZFN	C. CAPACITOR CH 16V 1U	1	
C505, 06	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C507, 08	ECUM1H182KBN	C. CAPACITOR CH 50V 1800P	2	
C509	ECUM1H332KBN	C. CAPACITOR CH 50V 3300P	1	
C510-16	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	7	
C517	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C518	ECUM1H102KBN	C. CAPACITOR CH 50V 1000P	1	
C519	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C520	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C522	ECUM1H150JCN	C. CAPACITOR CH 50V 15P	1	
C523, 24	ECUM1H103KBN	C. CAPACITOR CH 50V 0.01U	2	
C525	ECUM1H120JCN	C. CAPACITOR CH 50V 12P	1	
C527, 28	ECUX1E104KBN	C. CAPACITOR CH 25V 0.1U	2	
C531, 32	ECUX1E104KBN	C. CAPACITOR CH 25V 0.1U	2	
C533	ECUM1H120JCN	C. CAPACITOR CH 50V 12P	1	
C534-36	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	3	
C551	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C553, 54	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C555	ECEA0JPK221	E. CAPACITOR 6.3V 220U	1	
C556, 57	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	2	
C558	ECEA0JPK470	E. CAPACITOR 6.3V 47U	1	
C559	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C560, 61	ECUM1H471JCN	C. CAPACITOR CH 50V 470P	2	
C562, 63	ECUM1H101JCN	C. CAPACITOR CH 50V 100P	2	
C564	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C565	ECUM1H221JCN	C. CAPACITOR CH 50V 220P	1	
C566	ECUM1H104ZFN	C. CAPACITOR CH 50V 0.1U	1	
C567	ECUM1H121JCN	C. CAPACITOR CH 50V 120P	1	
C568	ECUM1H470JCN	C. CAPACITOR CH 50V 47P	1	
C569	ECUM1H680JCN	C. CAPACITOR CH 50V 68P	1	
C570	ECUM1H121JCN	C. CAPACITOR CH 50V 120P	1	
C572	ECUM1C105ZFN	C. CAPACITOR CH 16V 1U	1	

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS. USE ONLY THE SAME TYPE.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C573	ECUM1H103ZFN	C. CAPACITOR CH 50V 0.01U	1	
C574, 75	ECUM1H680JCN	C. CAPACITOR CH 50V 68P	2	
IC501	AN3343SC	IC	1	
IC551	BA7745FS	IC	1	
L501	VLQ0599J680	COIL 68UH	1	
L503, 04	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	2	
L505, 06	VLP0145	COIL	2	
L507, 08	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	2	
L551-53	VLQ0599J680	COIL 68UH	3	
L554	VLQ0599J6R8	COIL 6.8UH	1	
P501	VJS3537B014G	CONNECTOR (FEMALE) 14P	1	
P502	VJS3192T	CONNECTOR (FEMALE)	1	
P551	VJS3537B009G	CONNECTOR (FEMALE)	1	
Q551	MSD601	TRANSISTOR	1	
Q552	MSB709	TRANSISTOR	1	
R502	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R503	ERJ6GEYG101	M. RESISTOR CH 1/10W 100	1	
R504	ERJ6GEYG821	M. RESISTOR CH 1/10W 820	1	
R505	ERJ6GEYG222	M. RESISTOR CH 1/10W 2.2K	1	
R506	ERJ6GEYG682	M. REISITOR CH 1/10W 6.8K	1	
R507	ERJ6GEYF393	M. RESISTOR CH 1/10W 39K	1	
R508	ERJ6GEYG183	M. RESISTOR CH 1/10W 18K	1	
R509	ERJ6GEYG243	M. RESISTOR CH 1/10W 24K	1	
R510	ERJ6GEYG391	M. RESISTOR CH 1/10W 390	1	
R511	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R512	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R513, 14	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	2	
R515, 16	ERJ6GEYG391	M. RESISTOR CH 1/10W 390	2	
R517	ERJ6GEYG331	M. RESISTOR CH 1/10W 330	1	
R518	ERJ6RED100	M. RESISTOR CH 1/10W 10	1	
R519	ERJ6GEYG823	M. RESISTOR CH 1/10W 82K	1	
R552	ERJ6GEYG391	M. RESISTOR CH 1/10W 390	1	
R553	ERJ6GEYG273	M. RESISTOR CH 1/10W 27K	1	
R554	ERJ6GEYG243	M. RESISTOR CH 1/10W 24K	1	
R557	ERJ6GEYG182	M. RESISTOR CH 1/10W 1.8K	1	
R558	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R559, 60	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	2	
R561	ERJ6GEYF561	M. RESISTOR CH 1/10W 560	1	
R562	ERJ6GEYG681	M. RESISTOR CH 1/10W 680	1	
R563	ERJ8RED220	M. RESISTOR CH 1/10W 22	1	
R564	ERJ6GEYJ224	M. RESISTOR CH 1/10W 220K	1	
R566	ERJ6GEYG273	M. RESISTOR CH 1/10W 27K	1	
R567	ERJ6GEYG153	M. RESISTOR CH 1/10W 15K	1	
R568	ERJ6GEYG270	M. RESISTOR CH 1/10W 27	1	
R569	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R570	ERJ6GEYJ471	M. RESISTOR CH 1/10W 470	1	
R571, 72	ERJ6GEYF822	M. RESISTOR CH 1/10W 8.2K	2	
R573	ERJ6GEYG270	M. RESISTOR CH 1/10W 27	1	
R574	ERJ6GEYG152	M. RESISTOR CH 1/10W 1.5K	1	
R575	ERJ6RBD202	M. RESISTOR CH 1/10W 2K	1	
R576	ERJ6GEYG223	M. RESISTOR CH 1/10W 22K	1	
W101-05	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	5	
		MISCELLANEOUS		
	VSC3714	SHIELD CASE (UPPER)	1	
	VSC3478	SHIELD CASE (MIDDLE)	1	
	VSC3715	SHIELD CASE (LOWER)	1	
■ E6	VEP01617A	POWER C. B. A.	1	(RTL)
C1001	ECQU2A683MN	P. CAPACITOR 100V 0.068U	1	
⚠ C1002	VCKO259K102A	C. CAPACITOR 1000P	1	
⚠ C1004	VCKO259K102A	C. CAPACITOR 1000P	1	
⚠ C1008	VCKO260M222A	C. CAPACITOR 2200P	1	
C1009	ECEC2VA121B	E. CAPACITOR 350V 120U	1	
C1010	ECEA1VFE101	E. CAPACITOR 35V 100U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1011	ECKF1H471KB	C. CAPACITOR 50V 470P	1	
C1012	ECEA1HFE560	E. CAPACITOR 50V 56U	1	
C1014	ECA1EXLV220	E. CAPACITOR 25V 22U	1	
C1016	EEUFA1A122	E. CAPACITOR 10V 1200U	1	
C1017	ECEA1AGE221	E. CAPACITOR 10V 220U	1	
C1019	ECA0JFQ331	E. CAPACITOR 6.3V 330U	1	
C1020	ECEA1AGE221	E. CAPACITOR 10V 220U	1	
C1021	ECCD2H101J	C. CAPACITOR 500V 100P	1	
C1022	EEUFA1C182	E. CAPACITOR 16V 1800U	1	
C1023	ECEA1CFE331	E. CAPACITOR 16V 330U	1	
C1024	ECCD2H101J	C. CAPACITOR 500V 100P	1	
C1025	ECEA1HFE560	E. CAPACITOR 50V 56U	1	
C1029	ECQB1H333JF	P. CAPACITOR 50V 0.033U	1	
C1030	VCK0106K222	C. CAPACITOR 2200P	1	
D1001	ERZV07D471	DIODE	1	
D1002-05	EM1B	DIODE	4	
D1006	ERA22-02	DIODE	1	
D1007	MA165	DIODE	1	
D1008	MA723VT	DIODE	1	
D1009-11	MA165	DIODE	3	
D1012	F5KQ40	DIODE	1	
D1013	11EQS04	DIODE	1	
D1014	FMB-G16R	DIODE	1	
D1015	ERA22-02	DIODE	1	
D1018	MA4056	DIODE	1	
F1001	XBA1C16NU100	FUSE	1	
⚠ IC1001	STRS6705LF	IC	1	
L1001	ELF18D270A	LINE FILTER	1	
L1002-04	VLQ0611K220	COIL 22UH	3	
L1005	VLQ0599J101	COIL 100UH	1	
L1006, 07	VLP0074	COIL	2	
P1002	VJP3092	CONNECTOR (MALE)	1	
Q1001	PC817AB	TRANSISTOR	1	
Q1002, 03	2SD636-R	TRANSISTOR	2	(R)
Q1004	2SB641-R	TRANSISTOR	1	
Q1006	2SC1685	TRANSISTOR	1	
R1001	ERC12ZGK685	S. RESISTOR 1/2W 6.8M	1	
R1002	VSF0055	FUSE	1	
R1003	ERDS2FJ224	C. RESISTOR 1/4W 220K	1	
R1004	ERDS2FJ682	C. RESISTOR 1/4W 6.8K	1	
R1005	ERDS2FJ153	C. RESISTOR 1/4W 15K	1	
R1006	ERDS2FJ330	C. RESISTOR 1/4W 33	1	
R1007	ERDS2FJ1R5	C. RESISTOR 1/4W 1.5	1	
R1008	ERX1SJR68	M. RESISTOR 1W 0.68	1	
R1009	ERDS2FJ681	C. RESISTOR 1/4W 680	1	
R1010	ERDS2FJ151	C. RESISTOR 1/4W 150	1	
R1011	ERDS2FJ331	C. RESISTOR 1/4W 330	1	
R1012	ERDS2FJ683	C. RESISTOR 1/4W 68K	1	
R1013	ERDS2FJ473	C. RESISTOR 1/4W 47K	1	
R1014	ERDS2FJ471	C. RESISTOR 1/4W 470	1	
R1017	ERDS2FJ471	C. RESISTOR 1/4W 470	1	
R1018	ERDS2FJ221	C. RESISTOR 1/4W 220	1	
R1020	ERDS2TJ271	C. RESISTOR 1/4W 270	1	
R1021	ERDS2TJ562	C. RESISTOR 1/4W 5.6K	1	
R1022	ERDS2TJ182	C. RESISTOR 1/4W 1.8K	1	
R1023	ERDS2TJ563	C. RESISTOR 1/4W 56K	1	
R1024	ERDS2CKG2702	M. RESISTOR 1/4W 27K	1	
R1025, 26	ERDS2CKG8201	M. RESISTOR 1/4W 8.2K	2	
⚠ T1001	VLT0748	TRANSFORMER	1	
W11	VWJ0118	CABLE	1	
		MISCELLANEOUS		
E20	VJF0318	FUSE HOLDER	2	
E21	VMC0811	SPRING	1	
E22	VMZ0965	CAPACITOR COVER	3	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
E23	VMZ1356	CAPACITOR COVER	1	
E24	VMZ1886	CAPACITOR COVER	1	
E25	VSC4096	HEAT SINK	1	
E26	VMZ1835	SHIELD COVER	1	
E27	VMZ0429	FUSE COVER	1	
■ E7	VEP00T87A	MECH CONNECTION C.B.A.	1	(RTL)
D1501	LN59L.VT	DIODE	1	
IC1501,02	ON1387	PHOTO INTARAPUTER	2	
P1503	VJS3316A002	CONNECTOR (FEMALE) 2P	1	
P1504	VJS3820	CONNECTOR (FEMALE) 4P	1	
P1505	VJS3537B0146	CONNECTOR (FEMALE) 14P	1	
Q1501	PT493F1MN	PHOTO TRANSISTOR	1	
Q1502	PN205L-NC.VT	PHOTO TRANSISTOR	1	
SW1501	VES0895	REC SWITCH	1	
SW1502	VST0176	S-VHS CASSETTE SW	1	
		MISCELLANEOUS		
	VMD2029	GUIDE PIECE	1	
	VMD1927	PHOTO TR HOLDER	1	
	VMD1928	LED HOLDER	1	
■ E8	VEP08A07A	JOG C.B.A.	1	(RTL)
LD6701-03	LN38GCPPV	LED	3	
P6701	VJS2821	CONNECTOR (FEMALE)	1	
R6701-03	ERDS2TJ221	C.RESISTOR 1/4W 220	3	
SW6701	EVQ11407K	SWITCH	1	
VSQ0798	VSQ0798	JOG ENCODER	1	
		MISCELLANEOUS		
	VMX1852	LED SPACER	3	

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

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ORDER NO. VSD9402M632

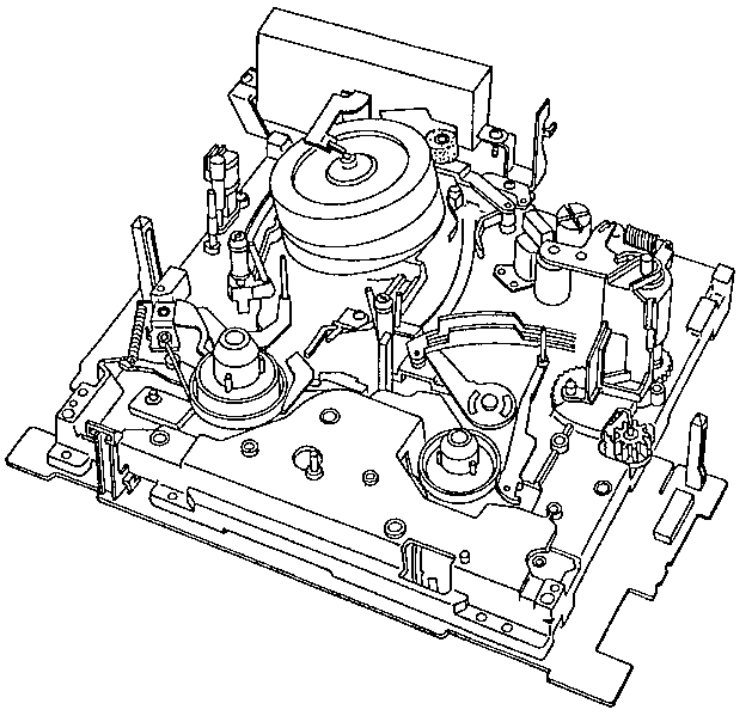
Service Manual

Video Cassette Recorder

VHS
PAL

Sec. 1 *General Information*
Sec. 2 *Maintenance Procedures*
Sec. 3 *Mechanical Adjustment Procedur*
Sec. 4 *Assembly & Phase Adjustment Procedure*

K-MECHANISM



IMPORTANT

The **K-MECHANISM** chassis are built in several Panasonic SVHS／VHS Video Cassette Recorder.

Thus, Properly file this service manual with the service manual of the relative video cassette recorder.

Panasonic

INTRODUCTION

This Service Manual contains the technical information which service personnel to understand and service the K-Mechanism.
The Maintenance Chart, Mechanical Parts List and Mechanical Specification, please refer to the service manual of each model.

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SECTION 1
GENERAL INFORMATION

The K mechanism maintains the same high performance as G2 mechanism but with a smaller quantity of mounted parts, 40% less than G2 mechanism.

1-1. FEATURE of K MECHANISM

1-1-1. Parts Reduction

<K Mechanism>

a. Reduction in the number of drive parts through the use of a single motor to perform front loading and unit loading.
b. Direct drive of brakes and loading gears with the multi-function main lever.
c. Elimination of sub lever and solenoids.

<Front Loading Unit>

a. Elimination of a slide switch, to reduce wiring.
b. Elimination or combining the joint parts.
c. Smaller and thinner the top plate and rack parts.

1-1-2. No Adjustment of the following is required.

a. Take-up inclined position.
b. P5 Post height.

1-1-3. Reduced Gear Phase Position Alignments

The K Mechanism has only 6 gear phase alignment positions and G2 mechanism has 12 gear phase alignment positions.

1-2. OPERATION of K-MECHANISM

The K mechanism has two motors, the loading motor and capstan motor. The loading motor operates the front loading/unloading and tape loading/unloading. The capstan motor operates each mode.
The bottom C.B.A. connects the mechanism to the system control circuit. On the bottom C.B.A. there are take-up and supply photo-sensors, Sensor LED, Mode Switch Connector, Safety Tab Switch, Supply and Take-up Reel Sensors and Loading Motor Connector. All sensor information sent to the system control circuit.

1-3. EMERGENCY CASSETTE REMOVAL

If the electrical circuit is defective and the action of unloading and front unloading do not work properly, it is possible to removing cassette manually.
There are 2 methods of removing the cassette.

A. Battery Operation

1. Remove the bottom plate.
2. Connect the battery (Manganese-Type (AA)(R6) 3pcs./+4.5V) to P1503 as shown in Fig.G1.
3. After moving the loading post to the unloaded position, disconnect the battery to stop the loading motor.
4. Turn the capstan rotor clockwise to take up the tape.
5. Reconnect the battery to eject the cassette.

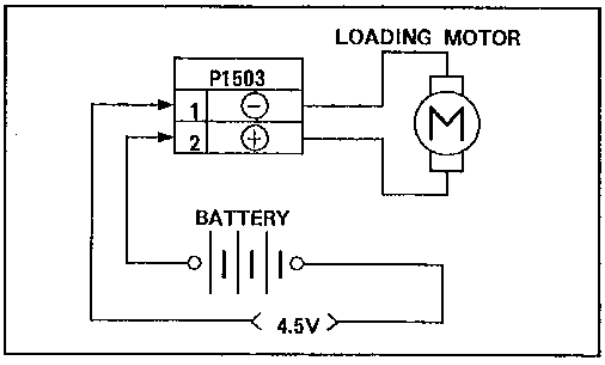


Fig.G1

B. Hand Operation

1. Remove the bottom plate.
2. Turn the worm gear to arrow mark direction (A) by finger as shown in Fig.G2 until loading post move to unloading position.
3. Turn the capstan rotor clockwise (B) to take up the tape.
4. Turn the worm gear again to eject the cassette.

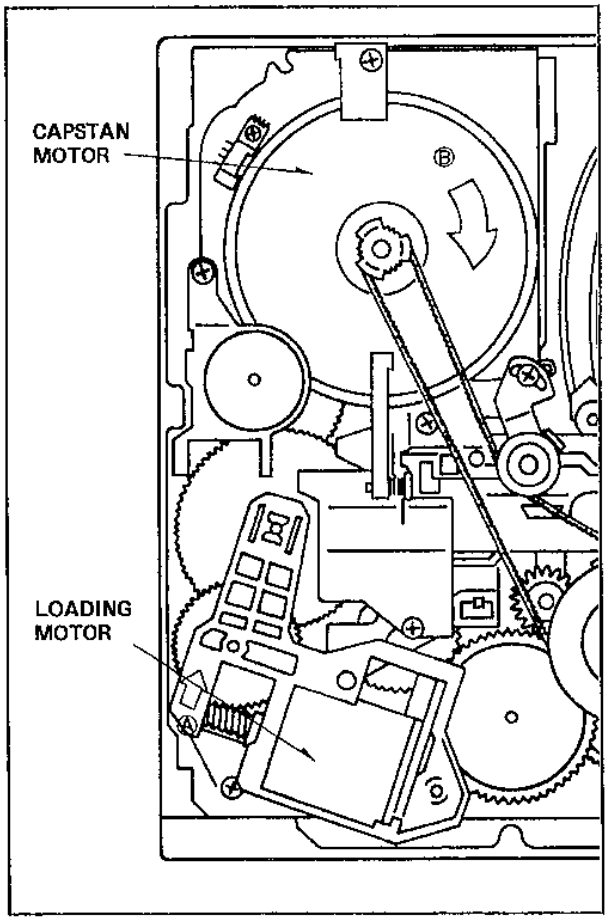


Fig.G2

1-4. EJECT OPERATION

The main cam gear rotates in the direction of the arrow. The projection (B) of the carriage connection gear engages with the recession (A) of the main cam gear. The carriage connection gear rotates in the direction of the arrow to perform the Eject operation.

If the Eject operation is performed without the cassette installed while repairing or making the mechanical phase alignment, the main cam gear will not rotate. For performing the Eject operation with the cassette carriage not installed, it is necessary to rotate the carriage connection gear by hand in the direction of the arrow.

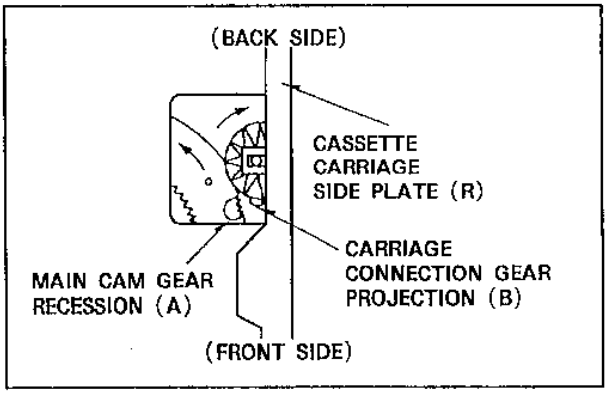


Fig.G3

1-5. REMOVAL of MECHANISM

1-5-1. Removal of Top Plate

1. Unscrew 2 screws (A) and unlock 4 locking tabs to arrow direction as shown in Fig.G4.
2. Lift up the Top Plate.

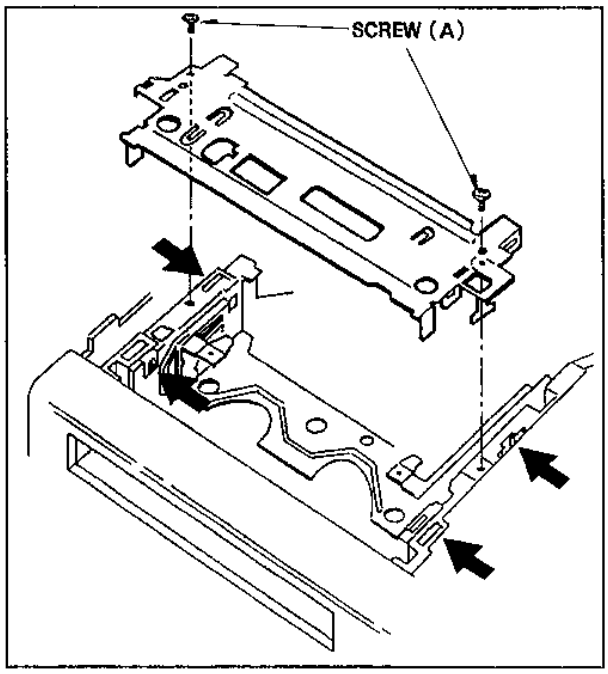


Fig.G4

1-5-2. Removal of Mechanism Chassis

1. Unscrew 2 screws (A) push the Holder Plate slightly to rear of the mechanism.
2. Unscrew a screw (B).
3. Disconnect all cable and connectors on the mechanism chassis.
   1)FE Head connector
   2)A/C Head connector
   3)Power Transistor connector
   4)Head Amp connector
   5)Capstan cable
4. Disconnect a Dew Sensor connector on the MAIN C.B.A.
5. Lift the mechanism chassis slightly and disconnect a connector of Cylinder Motor and a cable of Mechanism Connection C.B.A.
   Then mechanism chassis out of the unit.

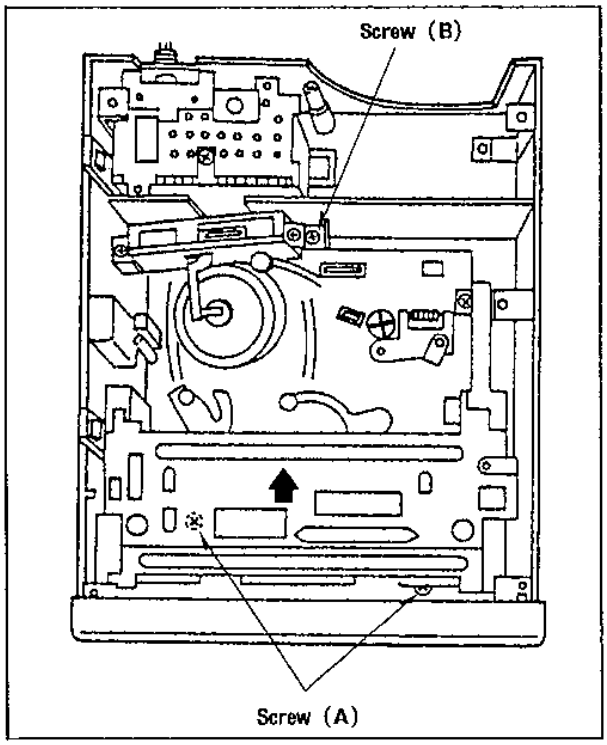


Fig.G5

1-5-3. Removal of Mechanism Connection C.B.A.

1. Unscrew 4 screws (C).
2. Lift up the Mechanism Connection C.B.A.

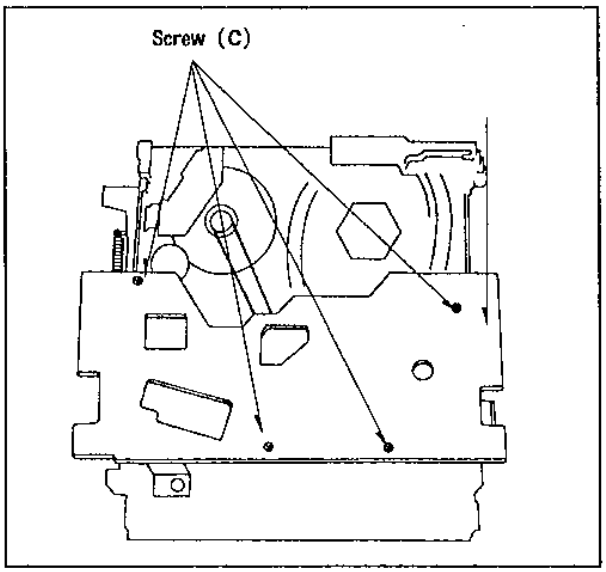
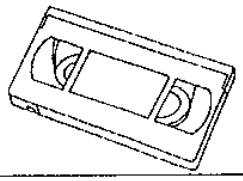
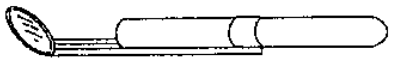
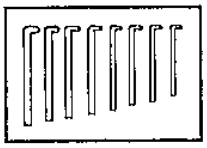
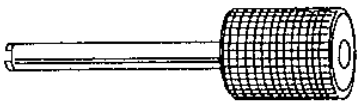
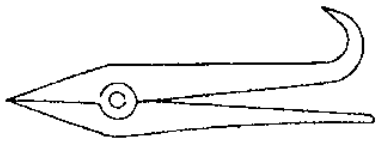
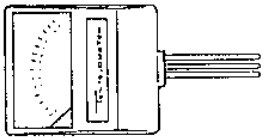
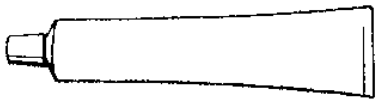
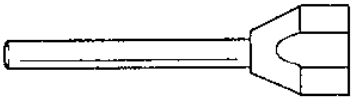
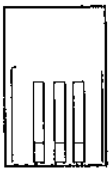
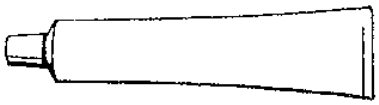
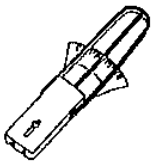


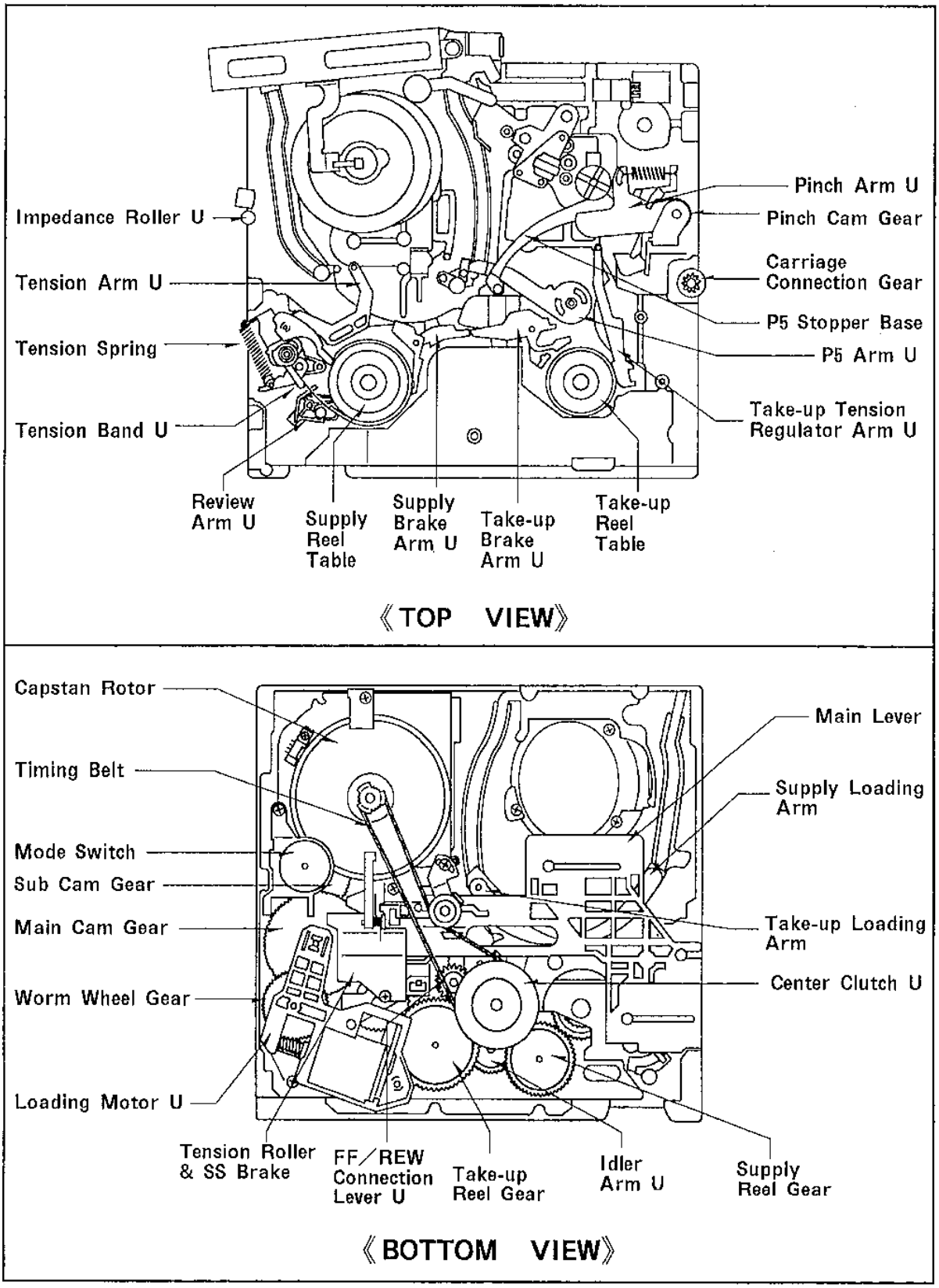
Fig.G6

1-6. SERVICE FIXTURES AND TOOLS

The regular maintenance is important to maintain the initial specification of the unit and prevent tape damage. The specified servicing fixture must be used to conduct adjustment.
The following fixtures, tools and measuring equipments are required to conduct complete Mechanical Adjustments.

VFM8080HQFP: VHS Alignment Tape 	VFK0948: Check Light 	VFK0326: Hex Wrench Set (0.7, 0.9, 1.2, 1.5, 1.6, 2.0, 2.4, 3.0mm) 
VFK0329: Post Adj. Screwdriver 	VFK0335: Retaining Ring Remover 	VFK0132: Back Tension Meter (Tentelometer,Made in U.S.A.) 
MOR265: Morlytone Grease (Black) (for metal parts) 	VFK0851: Center Fixing Tool 	VFK27: Head Cleaning Stick 
VFK0680: S.C.R. Grease (White) (for plastic parts) 	VFK66 ; Fan Type Tension Gauge 	VFK0330: Fine Adj. Screwdriver

1-7. Mechanical Parts Location



SECTION 2
MAINTENANCE PROCEDURE

The MAINTENANCE CHART please refer to the Maintenance Section which are shown in service manual for each model.

2-1. Replacement of the Upper Cylinder Unit

1. Unscrew 2 screws (A).
2. Unsolder arrows marked portions on the top of the Upper Cylinder as shown in Fig.M1.
3. Remove the Upper Cylinder.
4. The Upper Cylinder can be reinstalled by reversing the removal procedure.
   However, when insert the Upper Cylinder be extremely carefully so that marked portion of P.C.board of the Upper Cylinder correctly matches to mark of the Lower Cylinder as shown in Fig.M2.

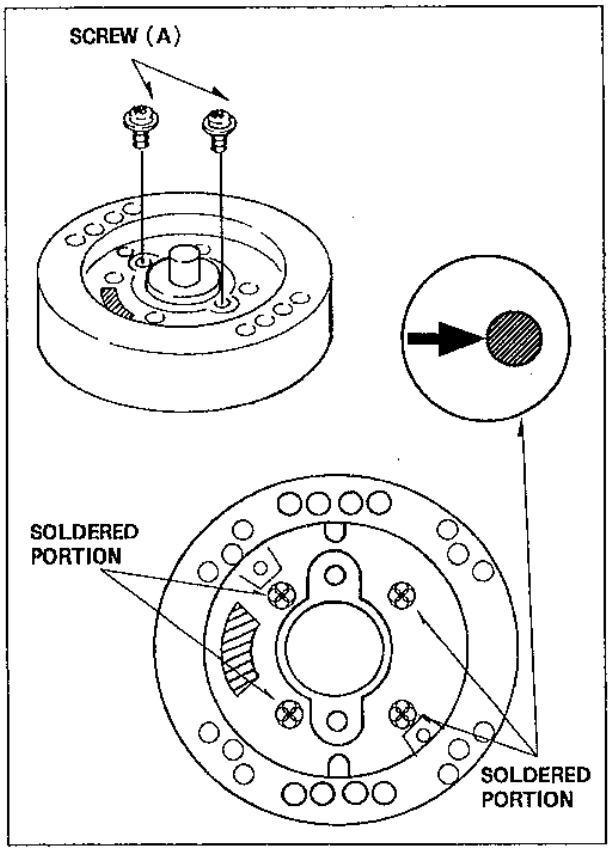


Fig.M1

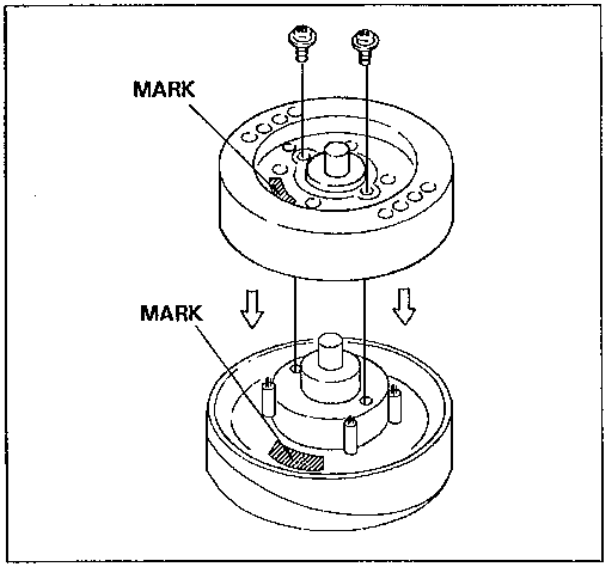


Fig.M2

<NOTE>
After reinstall the Upper Cylinder Unit should be perform Mechanical and Electrical adjustments.
3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-6. HORIZONTAL POSITION ADJUSTMENT

2-2. Replacement of Cylinder Unit

1. Remove the Earth Plate.
2. Unscrew 2 screws both side of Head Amp Unit and lift up the Head AMP.
3. Unscrew 3 screws (B) from back side of the mechanical chassis then remove the Cylinder Unit.
4. The Cylinder Unit can be reinstalled by reversing the removal procedure.

<Note>
After reinstall the Cylinder Unit should be perform Mechanical and Electrical adjustments.
3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-6. HORIZONTAL POSITION ADJUSTMENT

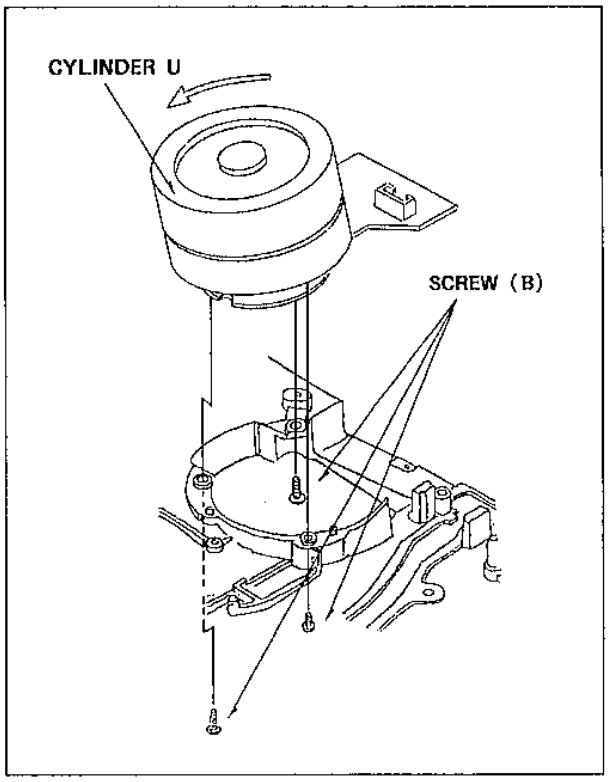


Fig.M3

2-3. Replacement of A/C HEAD Unit

1. Unscrew 3 screws (C)(D)(E) with the 3 springs then remove the A/C Head unit from the A/C Head Base.
2. The A/C Head Unit can be reinstalled by reversing the removal procedure.

<Note>
A space should be equality between the A/C Head U and the A/C Head Base when reinstall the A/C Head unit.

After reinstall the A/C Head Unit should be perform Mechanical and Electrical adjustments.
3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-3. COARSE ADJUSTMENT of A/C HEAD HEIGHT(1)
3-4. COARSE ADJUSTMENT of A/C HEAD HEIGHT(2)
3-5. FINE ADJUSTMENT of A/C HEAD HEIGHT
3-6. HORIZONTAL POSITION ADJUSTMENT

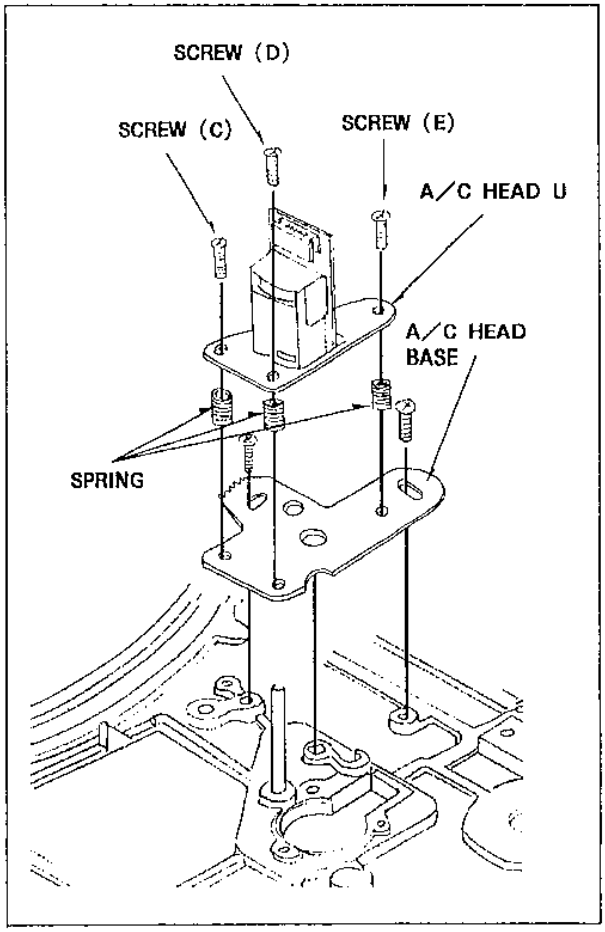


Fig.M4

2-4. Replacement of Full Erase Head Unit

1. Disconnect a connector (A).
2. Unscrew screw (F) then remove the FE Head.
3. FE Head Unit put into hole on the mechanical chassis and can be reinstalled by reversing the removal procedure.

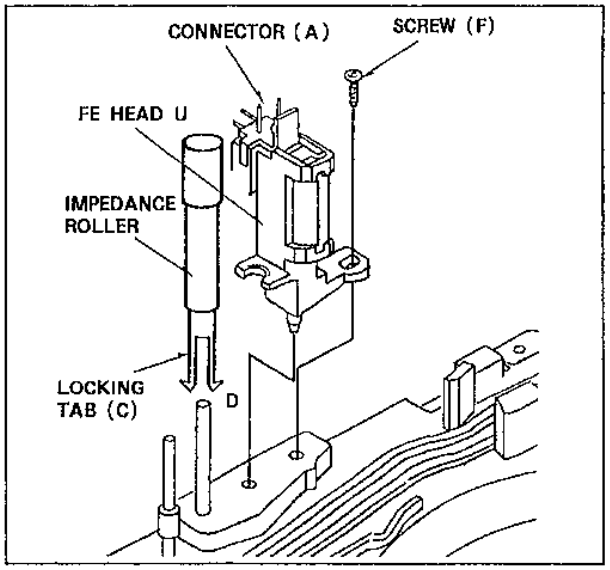


Fig.M5

2-5. Replacement of Capstan Rotor Unit and Stator Unit

1. Remove the Rotor Stopper.
2. Carefully lift up the Capstan Rotor from the Capstan Housing, taking care so as not loose the 2 Oil Seals.
3. Unscrew 3 screws (G) and remove the Capstan Stator Unit as shown in Fig.M6.
4. The Capstan Rotor and Stator can be reinstalled by reversing the removal procedure.

<Note>
After reinstall the Capstan Rotor and Stator Units should be perform Mechanical adjustment.
3-9. ADJUSTMENT of CAPSTAN HOUSING & STATOR
3-10. ADJUSTMENT of THRUST GAP
3-11. ADJUSTMENT of FG GAP

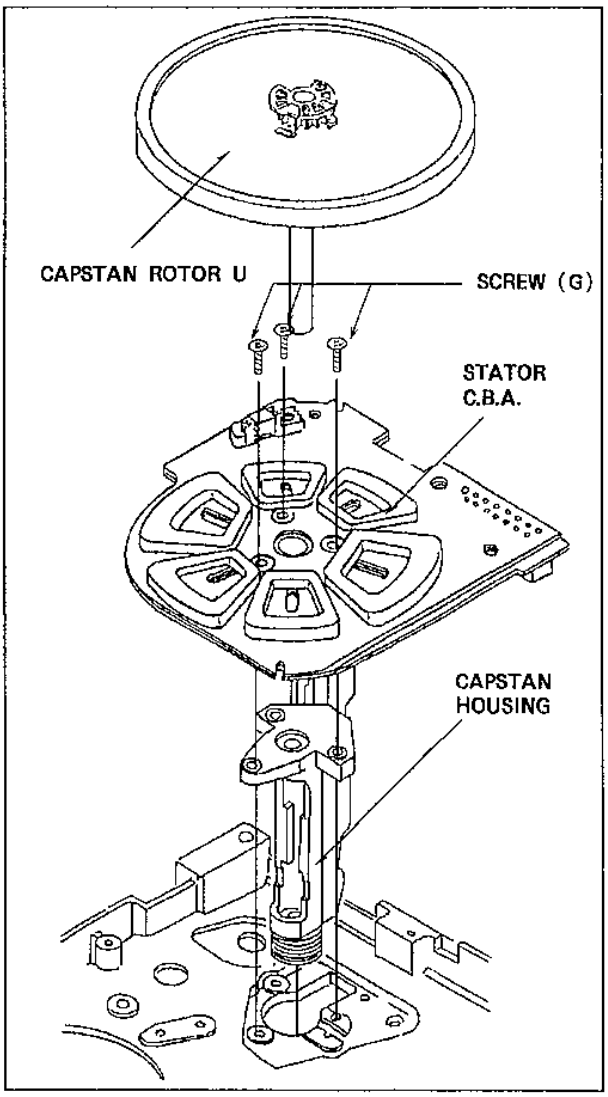


Fig.M6

2-6. Replacement of Impedance Roller Unit

1. Remove the Full Erase Head Unit with removal procedure(2-4).
2. Unlock then locking tab to direction of arrow mark as shown in Fig.M5 and remove the Impedance Roller Unit.
3. The Impedance Roller Unit can be reinstalled by reversing the removal procedure.

2-7. Replacement of Pinch Arm Unit

1. Unlock the locking tab on the Opener Piece and remove it from the shaft.
2. Remove the Pinch Arm Unit from the shaft.
3. The Pinch Arm Unit can be reinstalled by reversing the removal procedure.

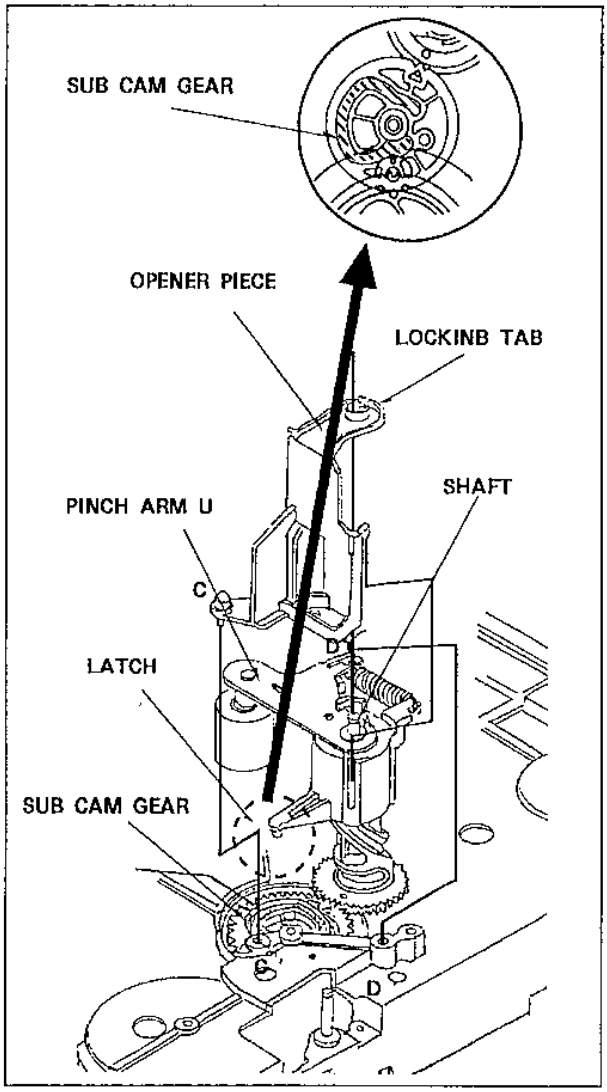


Fig.M7

2-8. Replacement of Take-up and Supply Reel Base Units

A. Supply Reel Base Unit

1. Remove the Tension Band Unit on the Supply Reel Base Unit.
2. Push the Supply main Brake Arm to direction of arrow mark and unlock the locking tab on the Supply Reel Base then pull up the Supply Reel Base Unit as shown in Fig.M8.
3. The Supply Reel Base Unit can be reinstalled by reversing the removal procedure.

B. Take-up Reel Base Unit

1. Push the Take-up Main Brake Arm to direction of arrow mark and unlock the locking tab on the top of Take-up Reel Base then pull out the Supply Reel Base Unit as shown in Fig.M8.

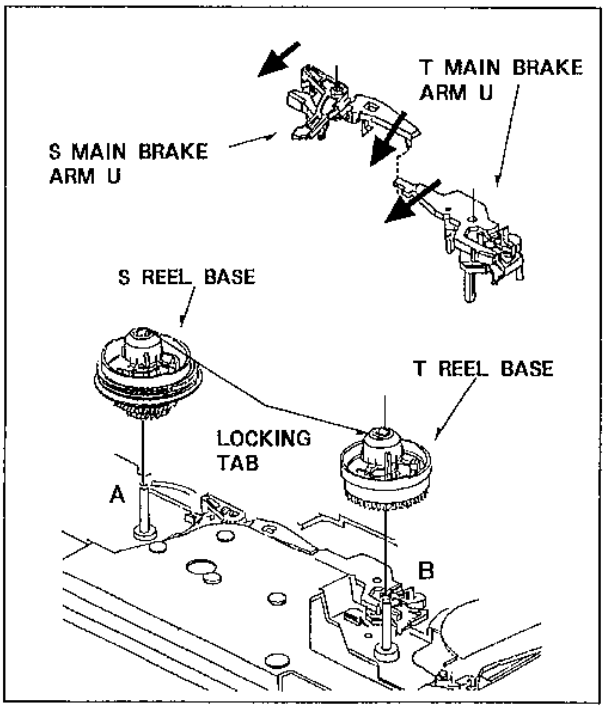


Fig.M8

2-9. Replacement of Take-up and Supply Brake Arm Unit.

1. Unlock the locking tab (A) to direction of arrow mark and lift up the Supply Brake Arm Unit.
2. Unlock the locking tab (B) and lift up the Take-up Brake Arm Unit.
3. Both Brake Arm Units can be reinstalled by reversing the removal procedure.
   However the boss (C) of the Supply Brake Arm Unit insert to hole (E) of mechanical chassis while pushing the Main Lever to direction of arrow mark as shown in Fig.M9. (expanded view)

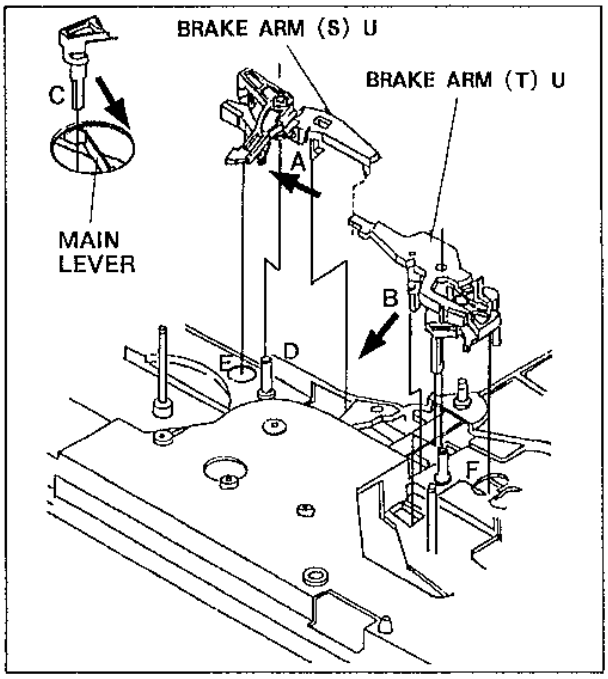


Fig.M9

2-10. Replacement of Tension Band Unit

1. Remove the cut washer (H) and lift up the Tension Arm Unit with the Tension Band and spring from the Tension Spring Arm.
2. Unlock the locking tab (A) to direction of arrow mark and remove the Tension Band from the Arm Unit.
3. Unlock the locking tab (B) and remove the Tension Band from the Tension Arm Unit.
4. The Tension Band Unit can be reinstalled by reversing the removal procedure.

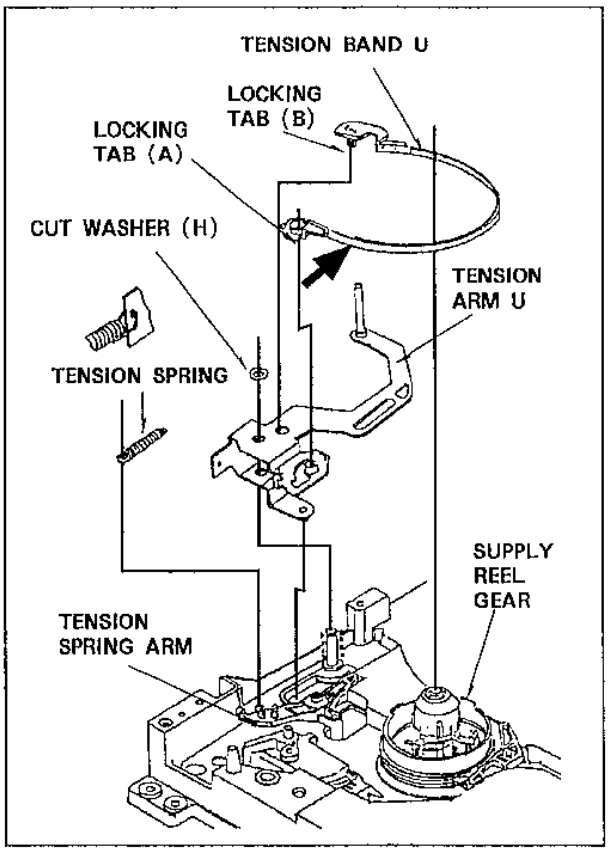


Fig.M10

2-11. Replacement of Loading Motor Unit

1. Unscrew screw (I).
2. Unlock the locking tab (A) from the top of the mechanical chassis.
3. Lift up the Loading Motor Bracket and push it to direction of arrow mark as shown in Fig.M11.
4. When reinstall the Loading Motor Unit, insert the locking hole (B') of Loading Motor Bracket Unit to shaft (B) on the mechanical chassis. Also a hole (C) of the loading Motor Unit must be matched to the shaft (C') as shown in Fig.M11.

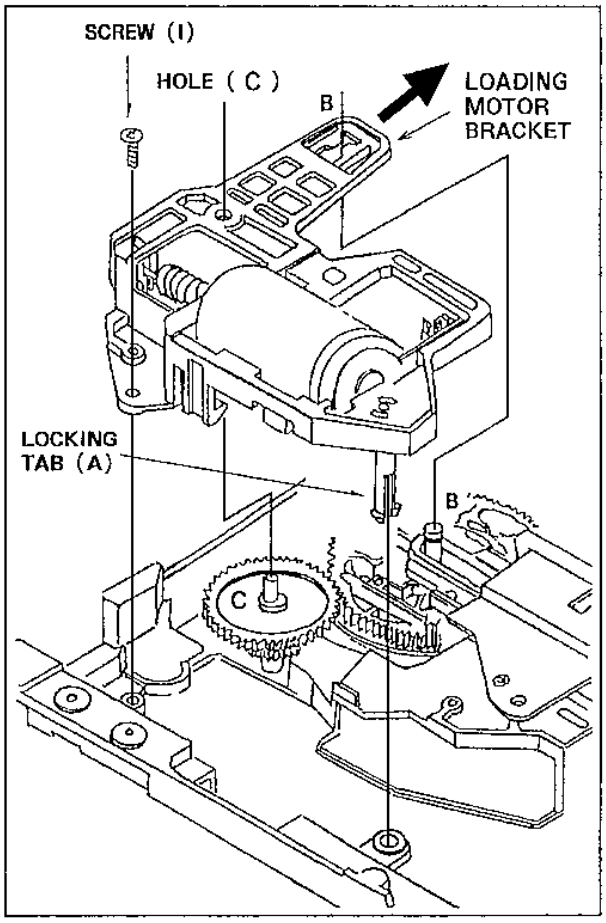


Fig.M11

2-12. Replacement of Cleaner Roller Unit

1. Unlock the locking tab (A) as shown in Fig.M12. and lift it up.
2. The Cleaner Roller Unit can be reinstalled by reversing the removal procedure.

3. Replacement of the Cleaner Rubber Unit.
   Hold the Cleaner Roller Unit and unlock the locking tab (B) then lift it up.

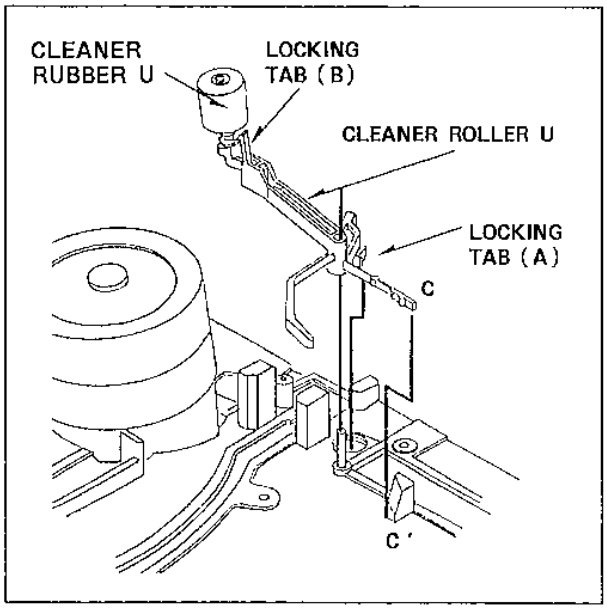


Fig.M12

2-13. Replacement of SS Brake Base Unit and Timing Belt

1. Remove the Timing Belt.
2. Unscrew (J) and (K) then remove SS Brake Base Unit.
3. SS Brake Unit and Timing Belt can be reinstalled by reversing the removal procedure.

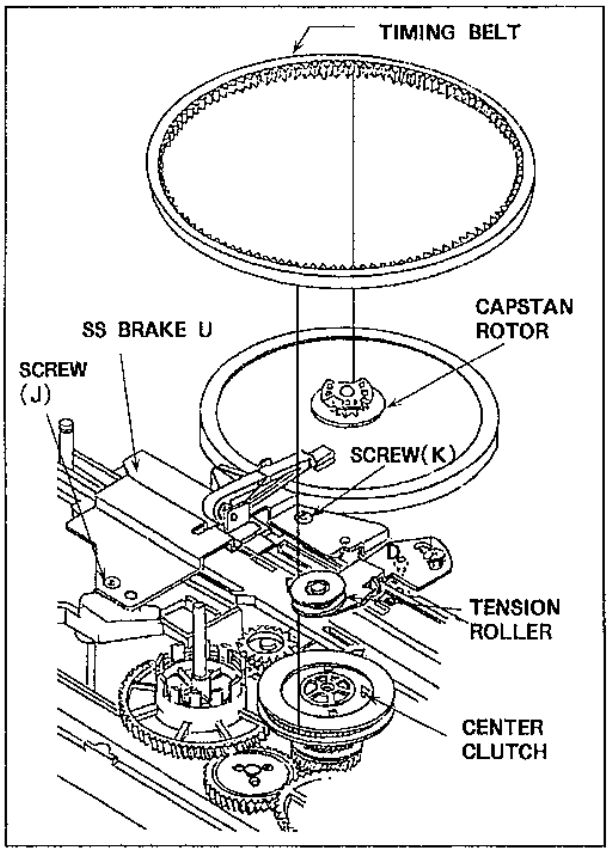


Fig.M13

2-14. Replacement of Supply & Take-up Inclined Base Unit

1. Remove SS Brake Unit, Main Lever Unit and Supply and Take-up Loading Arm Unit refer to SECTION 2. and 3. in this service manual.
2. Remove the Inclined Holder base (A) from back side of mechanism chassis.
3. Remove the Supply and Take-up Inclined Base Units.
4. The both Inclined Base Units can be reinstalled by reversing the removal procedure.

<NOTE>
After reinstall the Inclined Base Unit should be perform Mechanical adjustment.

3-2. FINE ADJUSTMENT of P2 and P3 POSTS
3-5. FINE ADJUSTMENT of A/C HEAD HEIGHT
3-6. HORIZONTAL POSITION ADJUSTMENT of A/C HEAD

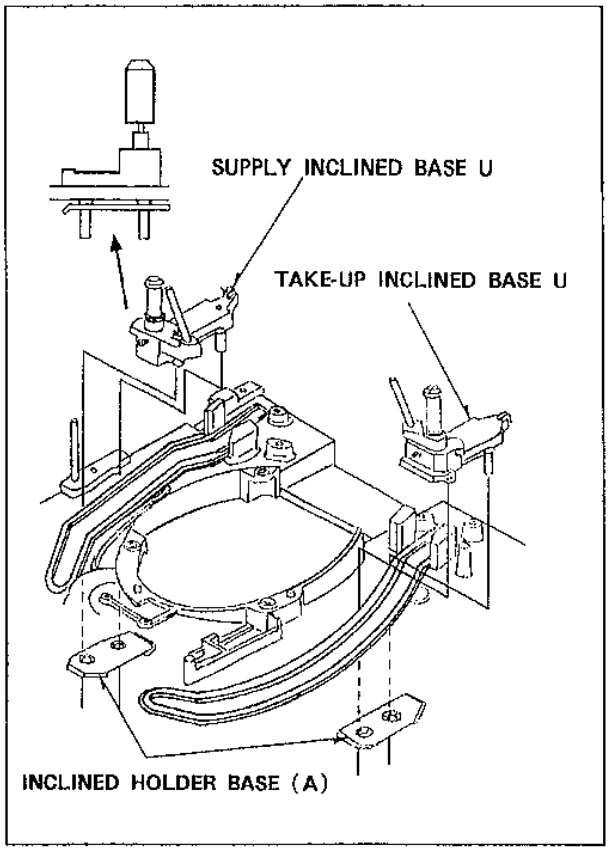


Fig.M14

SECTION 3
MECHANICAL ADJUSTMENT PROCEDURE

3-1. Coarse Adjustment of Tape Guide Post Height

1. Remove the Top Plate and Cassette Holder.
2. Turn the Loading Motor until the unloading completes.
3. Loosen the fixing screw of P2 and P3 Posts.
4. Rotate the P2 and P3 Posts clockwise to the end.
5. Rotate the P2 and P3 Posts twice counter-clockwise as shown in Fig.M15.
6. Install the Cassette Holder and Top Plate.
7. Playback the normal tape and make sure that the edge of not curing at the bottom or top end of the P1,P2,P3 and P4 Posts as shown in Fig.M17.

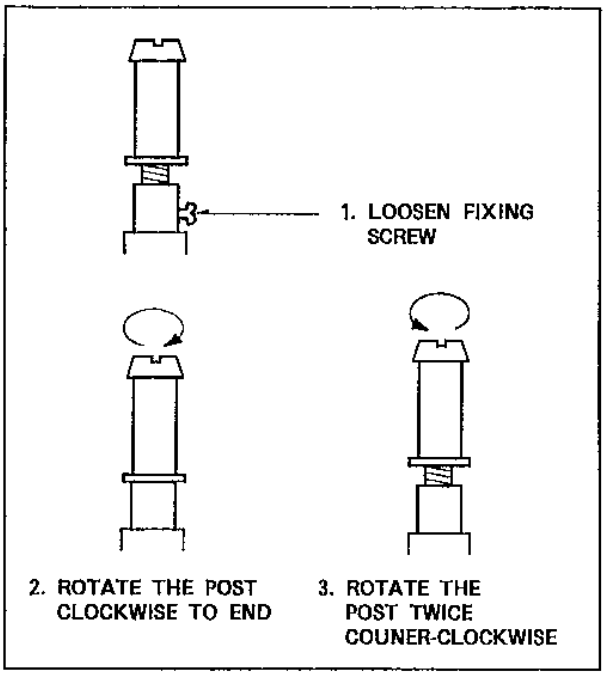


Fig.M15

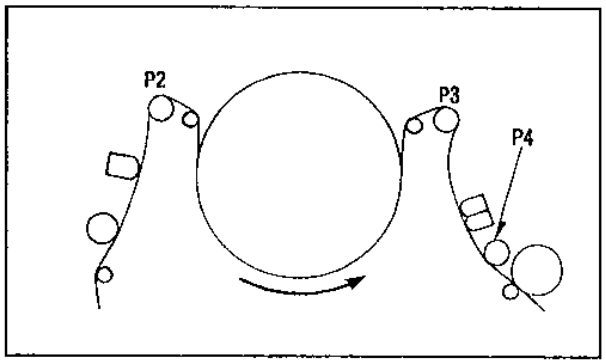


Fig.M16

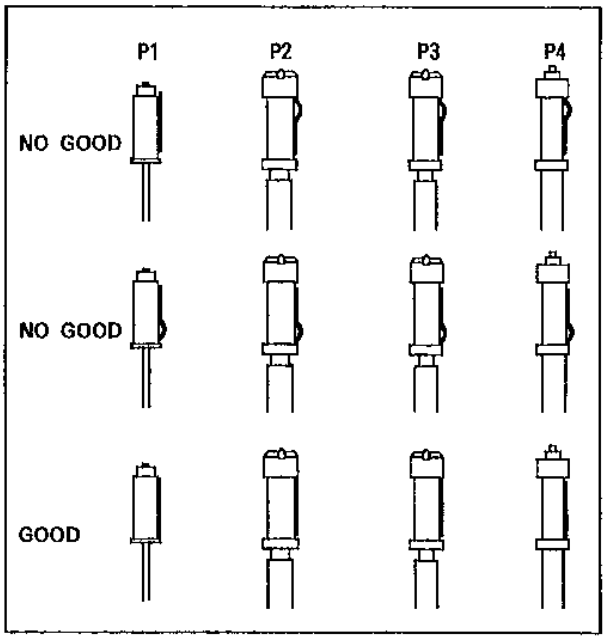


Fig.M17

3-2. Fine Adjustment of P2 and P3 Posts

1. Connect the oscilloscope to the Test Point of the HEAD AMP (Video RF Envelope) and the head switching pulse as a triggering signal.

<NOTE>
TEST POINT please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

2. Playback the 2nd portion of the alignment tape.
3. Press the tracking control button on the Front panel and adjust for maximum Video RF envelope.
4. If the RF envelope appears like example "A" or "B" in Fig.M18 then adjustment of the tape guide post (P3:Exit) is necessary.
5. Adjust the P3 post with the post adjustment screwdriver so that the RF envelope waveform at the exit portion becomes flat as shown in Fig.M18.
6. If the RF envelope appears like example "C" or "D" in Fig.M18 then adjustment of the tape guide post (P2:Entrance) is necessary.
7. Adjust the P2 post with the post adjustment screwdriver so that the RF envelope waveform at the entrance portion becomes flat as shown in Fig.M18.

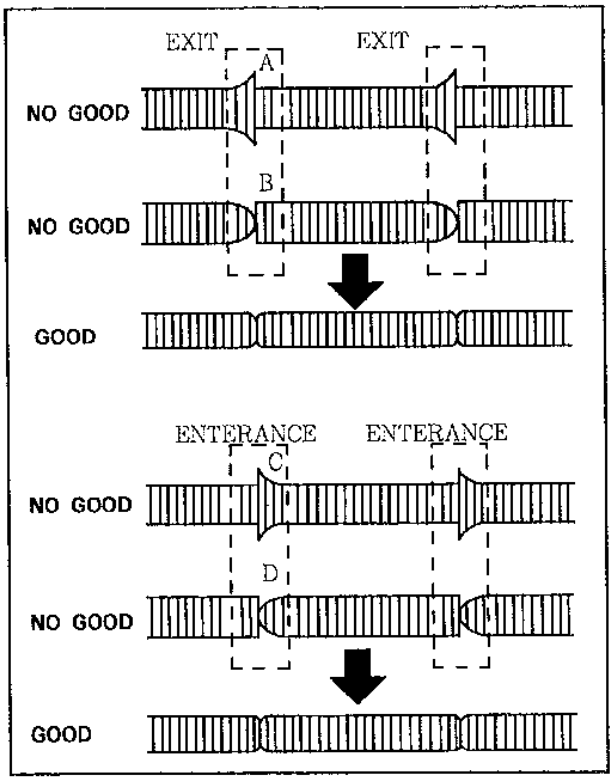


Fig.M18

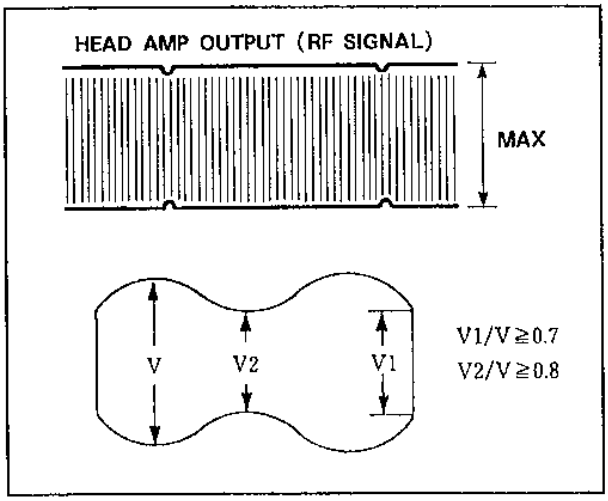


Fig.M19

3-3. Coarse Adjustment of A/C Head Height (1)

<NOTE>
This procedure should be performed only when the A/C Head is replaced.

1. Playback the normal tape.
2. Turn the 3 screws (A)(B)(C) mutually so that lower edge of tape running at lower edge of A/C Head and confirm a space as much as possible to flat between the A/C Head Unit and the A/C Head Base.

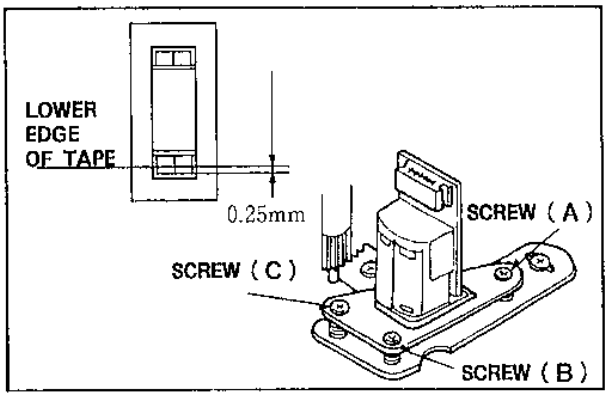


Fig.M20

3-4. Coarse Adjustment of A/C Head Height (2)

1. Playback the normal tape.
2. Rotate the screw (A) as shown in Fig.M20 until the wrinkle appears on the lower edge of tape at P4 Post.
3. Rotate the screw (B) until the wrinkle just disappear on the lower edge of tape at P4 Post.

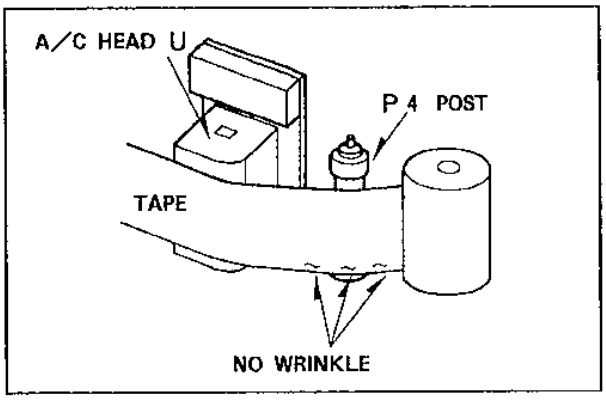


Fig.M21

3-5. Fine Adjustment of A/C Head Height

1. Connect the oscilloscope to the Audio output.
2. Playback the 2nd portion of the alignment tape.
3. Rotate the screw (C) so that audio signal becomes maximum.

<When moving the A/C Head up>

1. Rotate the screw (A) counter-clockwise until the wrinkle appears on the lower edge of tape at P4 Post.
2. Rotate the screw (B) counter-clockwise until just disappears on the lower edge of tape at P4 Post.
3. Rotate the screw (C) counter-clockwise until the audio signal is maximized.

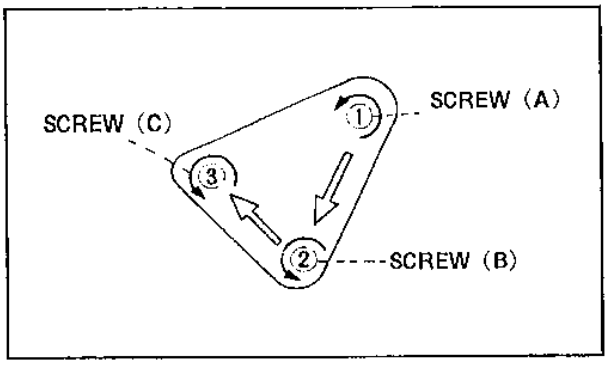


Fig.M22

<When moving the A/C Head down>

1. Rotate the screw (B) clockwise until the wrinkle appears on the lower edge of tape at P4 Post.
2. Rotate the screw (A) clockwise until the wrinkle just disappear on the lower edge of tape at P4 Post.
3. Rotate the screw (C) clockwise until the audio signal is maximized.

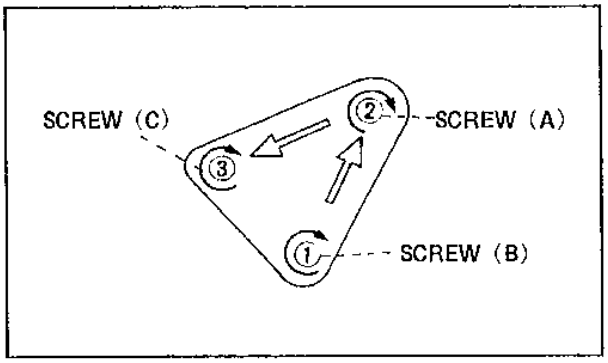


Fig.M23

3-6. Horizontal Position Adjustment of A/C Head.

<NOTE>
TEST POINT and JUMPER WIRE position, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

1. Set the tracking control into the center fix position by connect a jumper wire on the MAIN C.B.A.
2. Connect the oscilloscope to the Audio output, Video RF envelope on the Head Amp test point and head switching pulse on the Head Amp test point as for triggering.
3. Playback the 4th portion of the alignment tape.
4. Loosen the 2 screws (D)(E).
5. Adjust the A/C Head Base (F) so that the phase of audio drop-out and RF video drop-out becomes the same as possible. Fig.M24.
6. Playback the 2nd portion of the alignment tape.
7. Adjust the A/C Head Base (F) until the video RF signal is maximized.
8. Carefully tighten screw (D) with hold the A/C Head Base position with the Fine Adjustment Gear Driver then tighten screw (E).

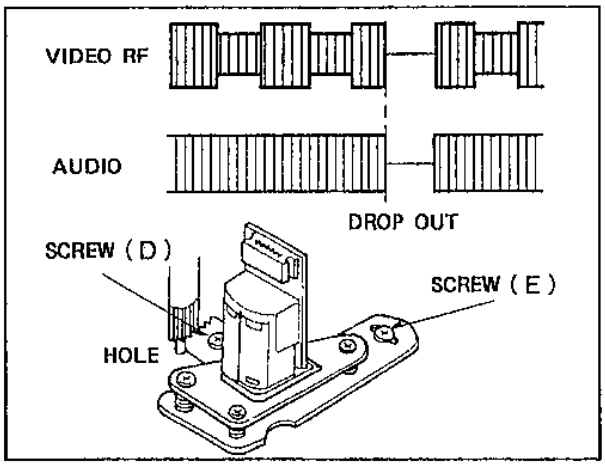


Fig.M24

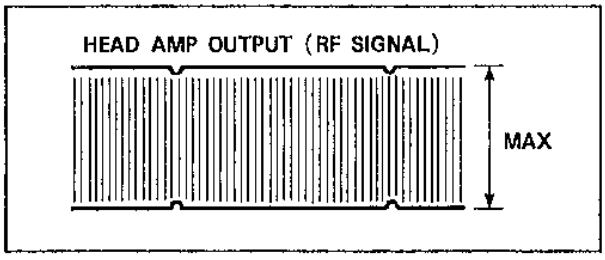


Fig.M25

3-7. Adjustment of Tension Post Position

1. Remove the Top Plate and Cassette Holder.
2. Turn the Loading Motor until the loading completes.
3. Adjust the hole of the Tension Band Unit by Hex wrench so that the left edge of the Impedance Roller and Tension Arm Unit as shown in Fig.M26.

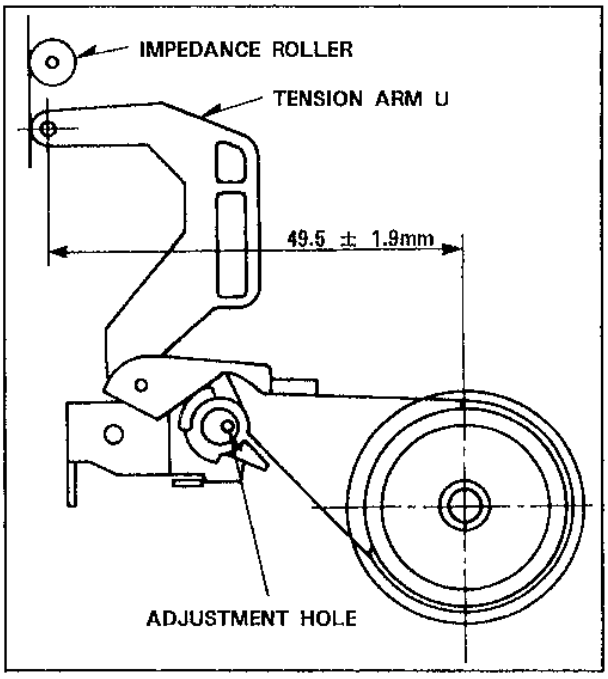


Fig.M26

3-8. Adjustment of Back Tension

1. Playback the cassette tape from the begging of tape and wait until tape movement has stabilized.
2. Insert the back tension meter into the path of the tape and confirm the back tension to be within specification as shown in Fig.M27.
3. If back tension is not in the specification, change the spring notch as shown in Fig.M28.

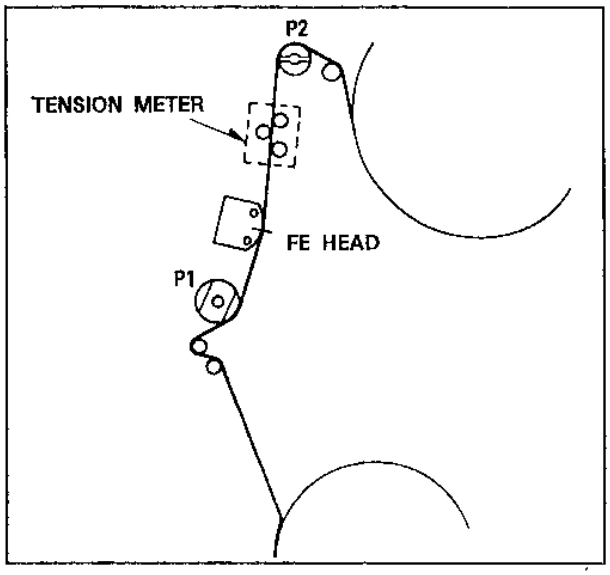


Fig.M27

<NOTE>
Specification of Back Tension, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

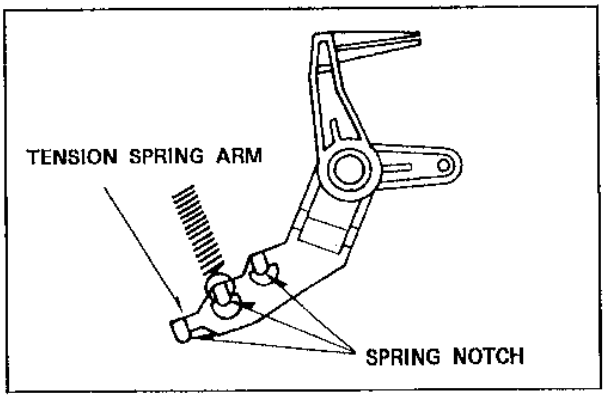


Fig.M28

3-9. Adjustment of Capstan Housing & Stator.

1. Install the Capstan Housing into the mechanical chassis and place the Capstan Stator into position.
2. Loosely tighten 3 screws (G).
3. Insert the Center Fixing Tool (VFK0851) as shown in Fig.M29.
4. Tighten 3 screws (G).
5. Remove the Center Fixing Tool.

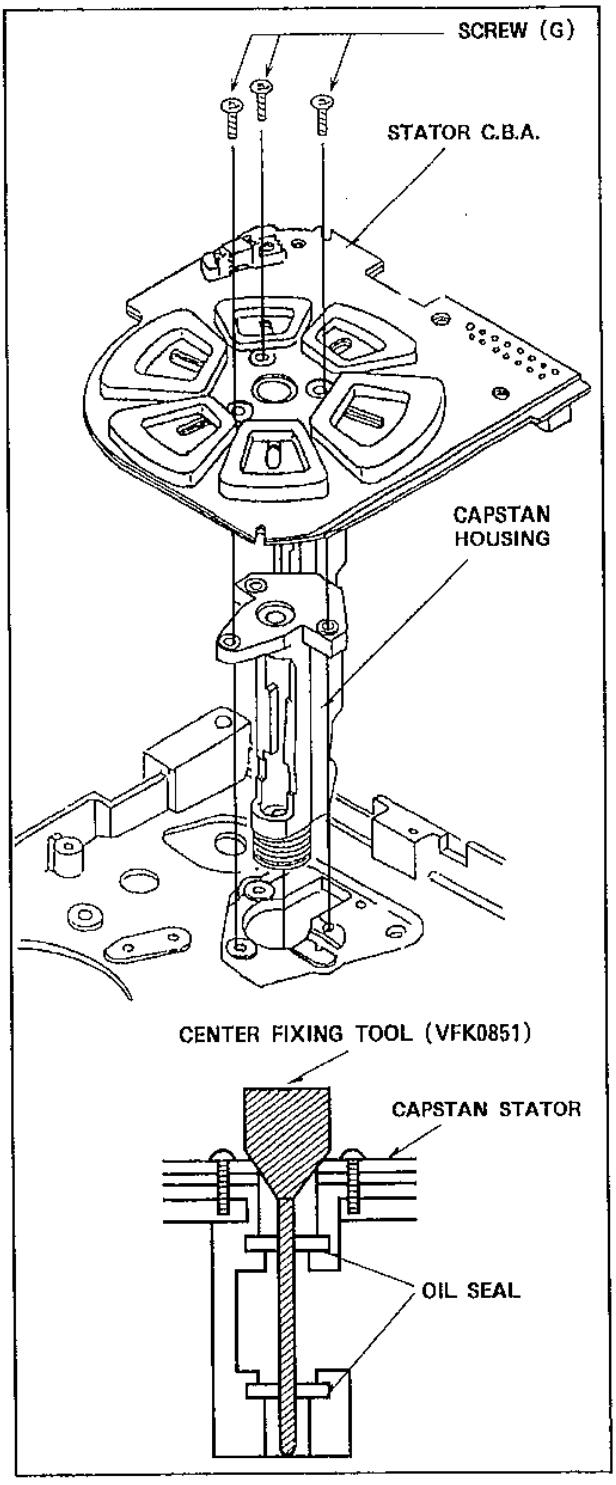


Fig.M29

3-10. Adjustment of Thrust Gap

1. Turn the Thrust Adjustment Screw clockwise to until the Capstan Rotor just separate from the Capstan Stator while rotating the Capstan Rotor by hand.
2. Turn the Thrust Adjustment Screw clockwise to 180 degrees from point at step 1.
3. Set the 2 Oil Seal to edge of the Capstan Housing as show in Fig.M30.

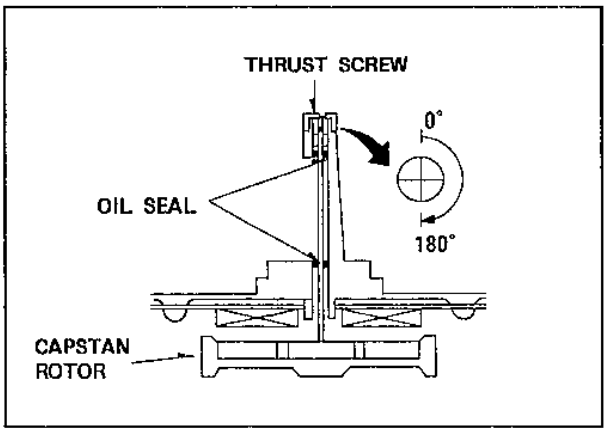


Fig.M30

3-11. Adjustment of FG GAP

1. Loosen screw (H) and set the Fine Adjustment Screw Driver in the hole on the Capstan Stator Unit.
2. Adjust the gap between FG Head and the Capstan Rotor.
3. After adjustment, tighten a screw (H).

<NOTE>
Specification of FG GAP, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

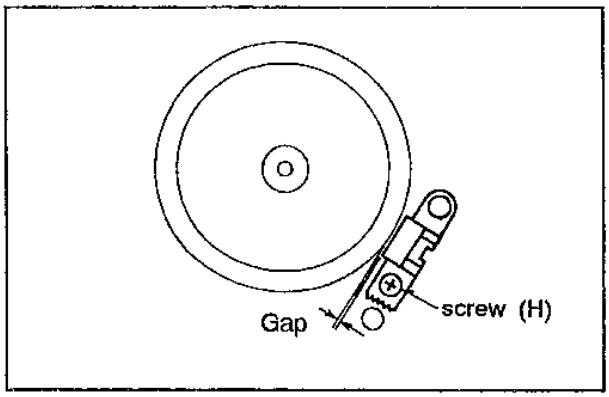


Fig.M31

3-12. Pressing Force Confirmation of the Pressure Roller

1. Playback the end portion of the 120 minutes tape.
2. Set the Fan type tension gauge to point (A) and push to direction indicated by the arrow (B) as shown in Fig.M32.
3. Confirm that reading of tension gauge is in specification at momentary stop the tape running.

<Note>
Specification of PRESSING FORCE, please refer to the MECHANICAL ADJUSTMENT INFORMATION which are shown in service manual for each model.

If the pressing force is not in specification, change the pressure spring.

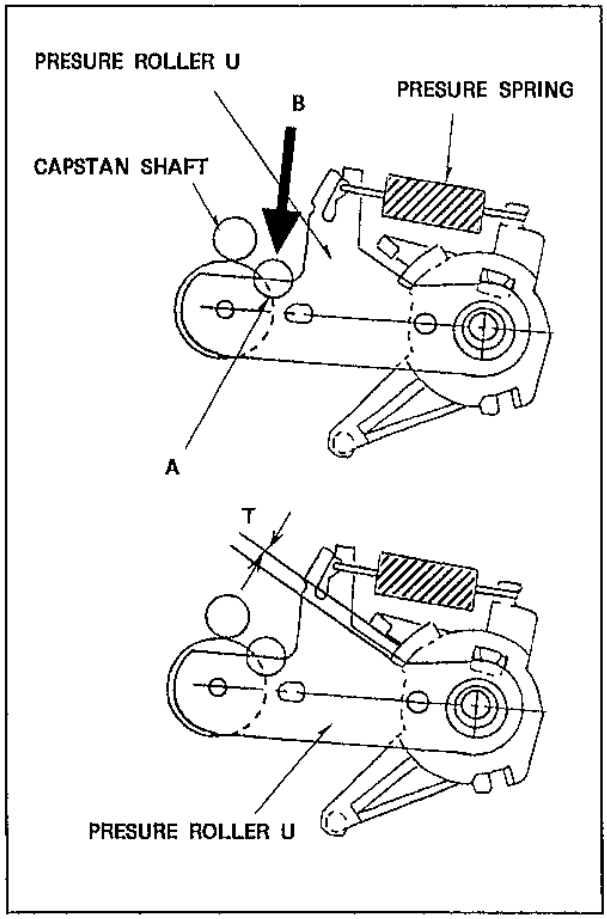


Fig.M32

SECTION 4
ASSEMBLY & PHASE ADJUSTMENT PROCEDURE

4-1. Assembly Procedures of Mechanism

The gear phase alignment is performed in the cassette down position and is crucial for the K-Mechanism to operate correctly.

1. Top view of gear phase alignment marks.
   There are alignment marks on the pinch cam gear and sub cam gear. there is one alignment mark on the carriage gear.

2. Bottom view of gear phase alignment marks.
   There are alignment marks on take-up loading gear and supply loading gear. There is an additional mark on the take-up loading gear that aligns with the mark on the main lever. There are alignment marks on the main cam gear and the sub cam gear. The mode switch gear mark aligns with a notch in the mode switch frame.

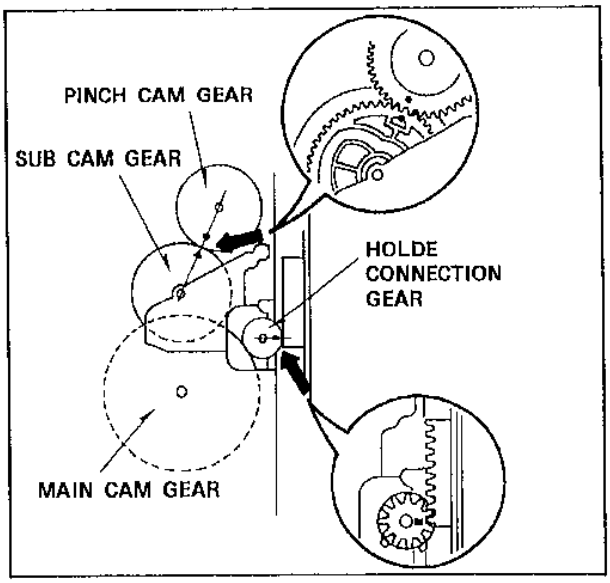


Fig.M33

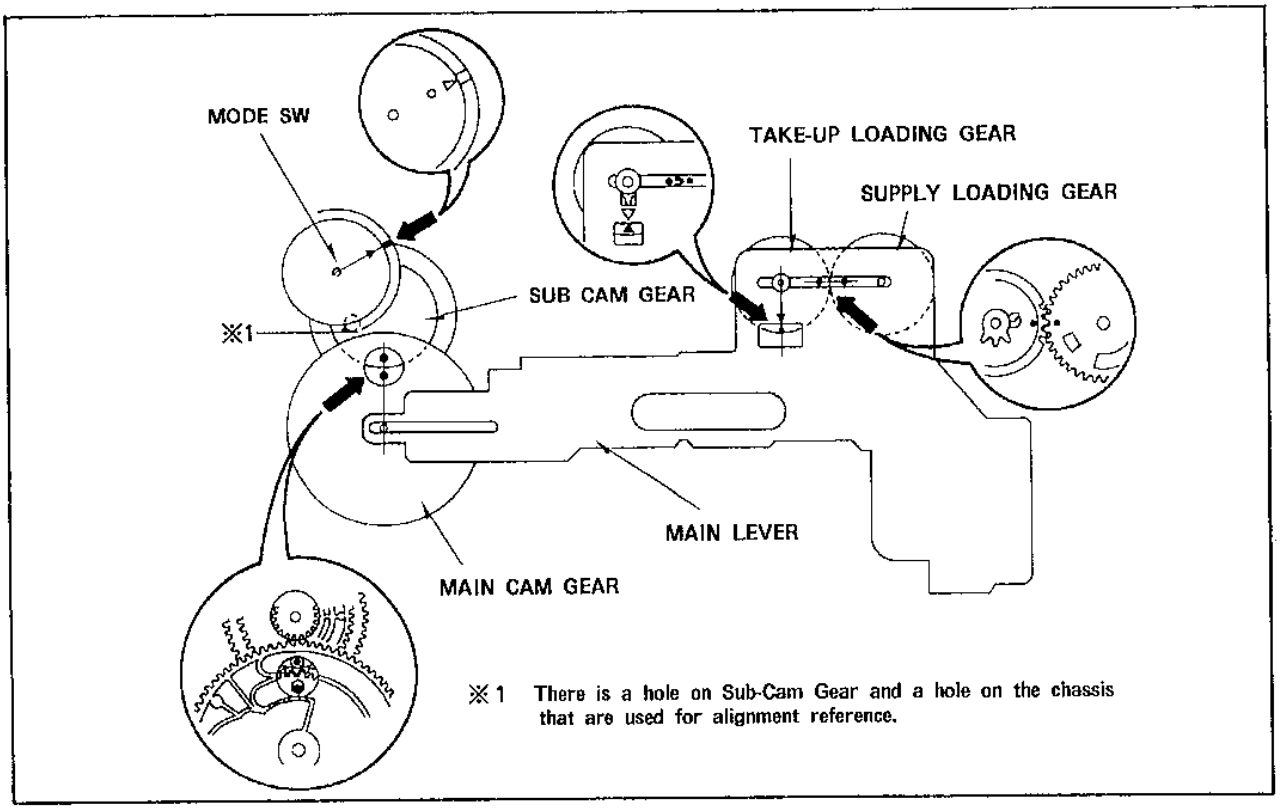

MODE SW
TAKE-UP LOADING GEAR
SUPPLY LOADING GEAR
SUB CAM GEAR
※1
MAIN LEVER
MAIN CAM GEAR
※1 There is a hole on Sub-Cam Gear and a hole on the chassis that are used for alignment reference.

Fig.M34

4-2. Assembly of parts on the Top Chassis

1. Install the Pinch Cam Gear onto shaft (A) and the P5 Arm Unit onto shaft (B).
2. Install the P5 Stopper Base with the cut washer (D) and screw (C).
3. Install the P5 Stopper on the P5 Stopper Base with latch (E).

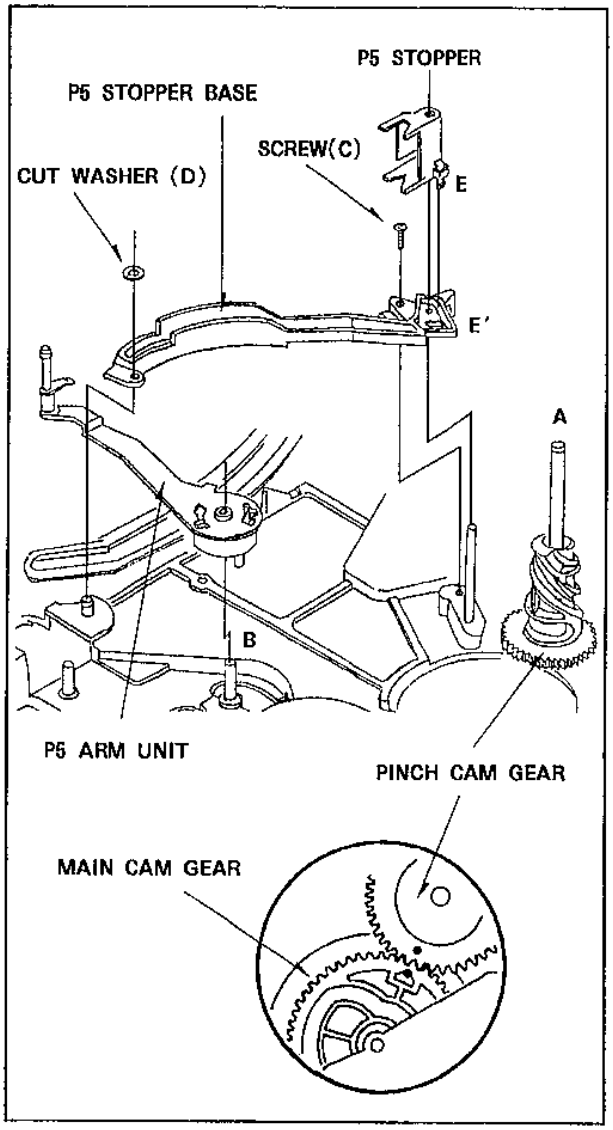


Fig.M35

4-3. Assembly of parts on the Bottom Chassis

1. Install the Idler Arm Unit onto shaft (F).
2. Install the Take-up and Supply Reel Gears onto shaft (G) and (H).
3. Install the Idler Regulator Level onto shaft (I) then install the Direct Lever.
4. Install the Center Clutch onto shaft (F) with the cut washer.

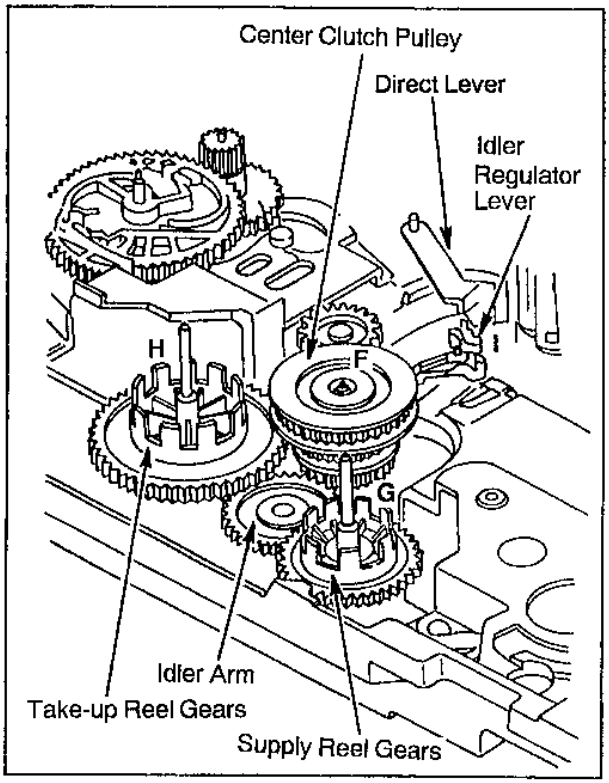


Fig.M36

4-4. Assembly of Main Cam Gear and Sub Cam Gear

1. Install the Sub Cam Gear on to shaft (J) so that the chassis hole aligns with hole in the Sub Cam Gear.
2. Rotate the Holder Connection Gear to position of arrow mark as shown in Fig.M37.
3. Install the Main Cam Gear onto shaft (K) so that the hole of the Main Cam Gear aligns with the hole in the Sub Cam Gear. Also insert the boss of the Take-up Tension Regulator Arm into the slot on the Main Cam Gear.

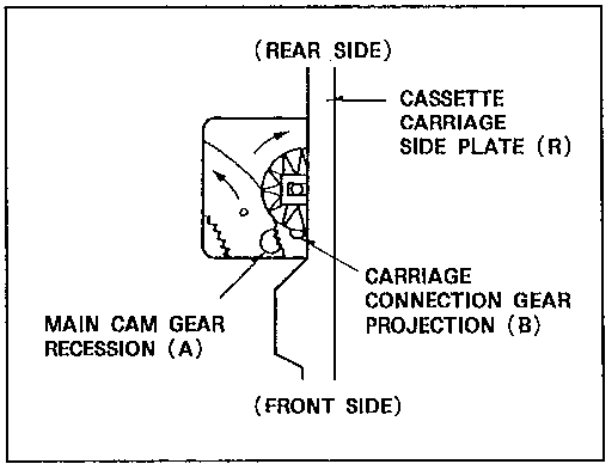


Fig.M37

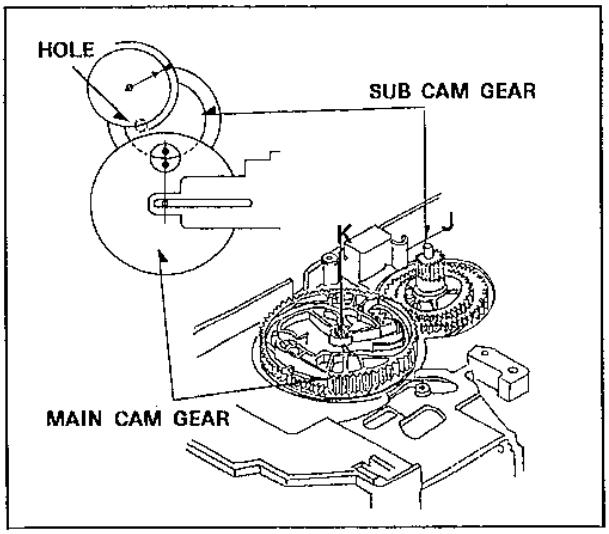


Fig.M38

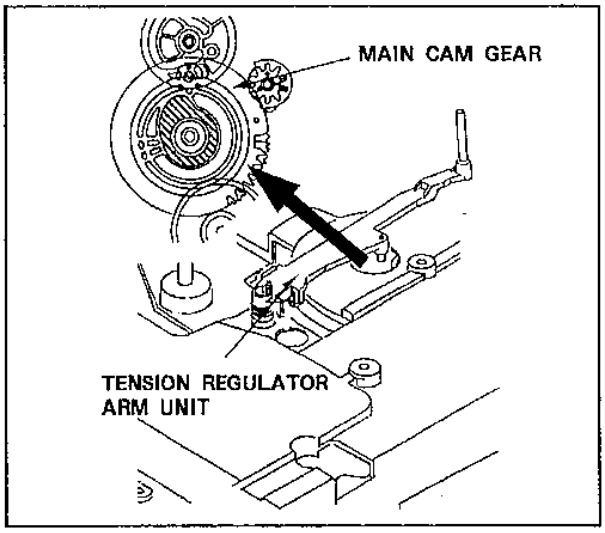


Fig.M39

4-5. Assembly of Mode Switch

1. Align a triangle mark on the Mode Switch Gear with the notch on the Mode Switch frame.
2. Confirm the Main and Sub Cam Gears aligned properly then install the Mode Switch with screw (L).

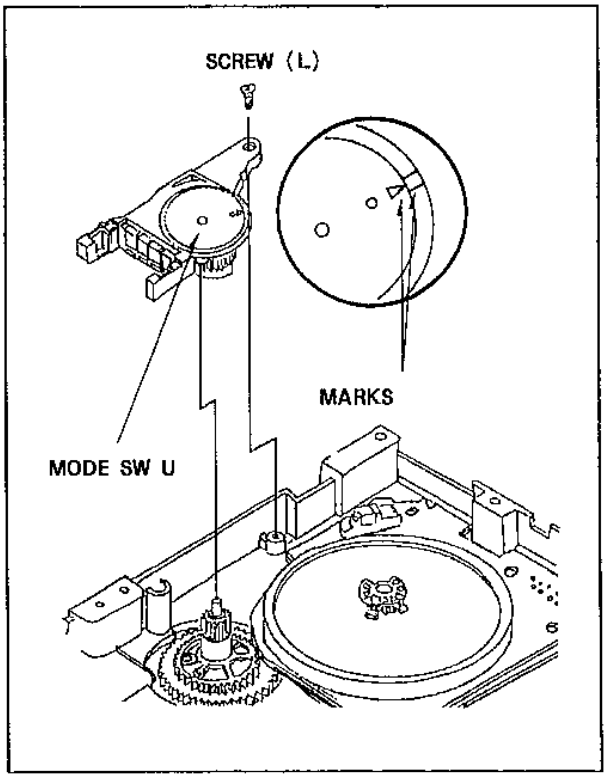


Fig.M40

4-6. Assembly of Take-up and Supply Loading Gears.

1. Install the Supply Loading Gear onto the shaft (S).
2. Install the Take-up Loading Gear onto the shaft (T) so that hole on the Take-up Loading Gear align with the hole on the Supply Loading Gear.
3. Install the Supply Loading Arm onto shaft of the Supply Inclined Base with washer.
4. Insert the Take-up Loading Arm onto shaft of the Take-up Inclined Base with washer.

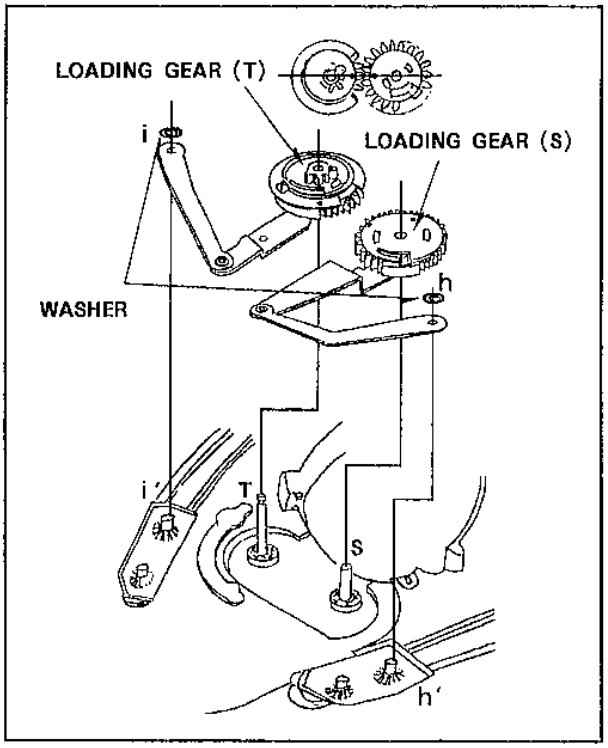


Fig.M41

4-7. Assembly of Main Lever

1. Install the Main Lever Arm checking that the boss of arms and shafts are in correct position and mark on the Main Lever Arm is aligned with mark on the Take-up Loading Gear.
2. Insert the 2 cut washer as shown in Fig.M42.

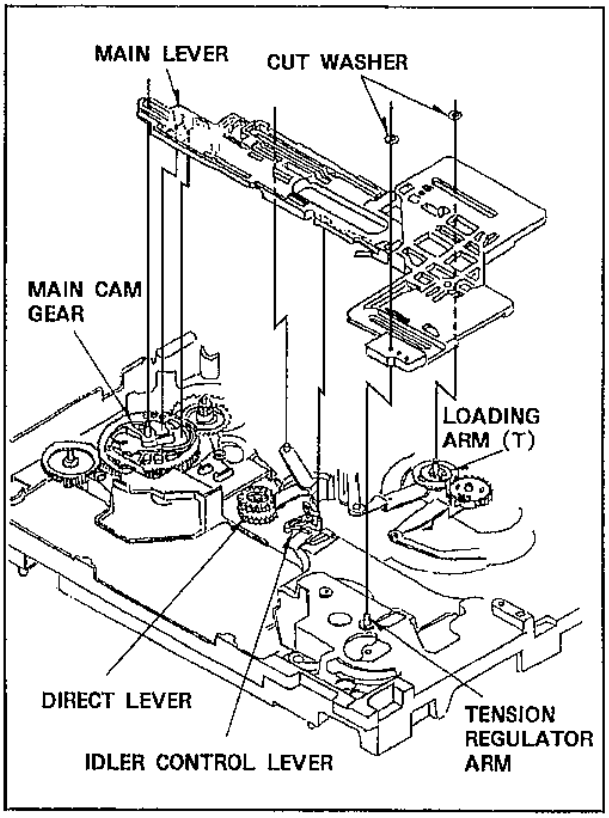


Fig.M42

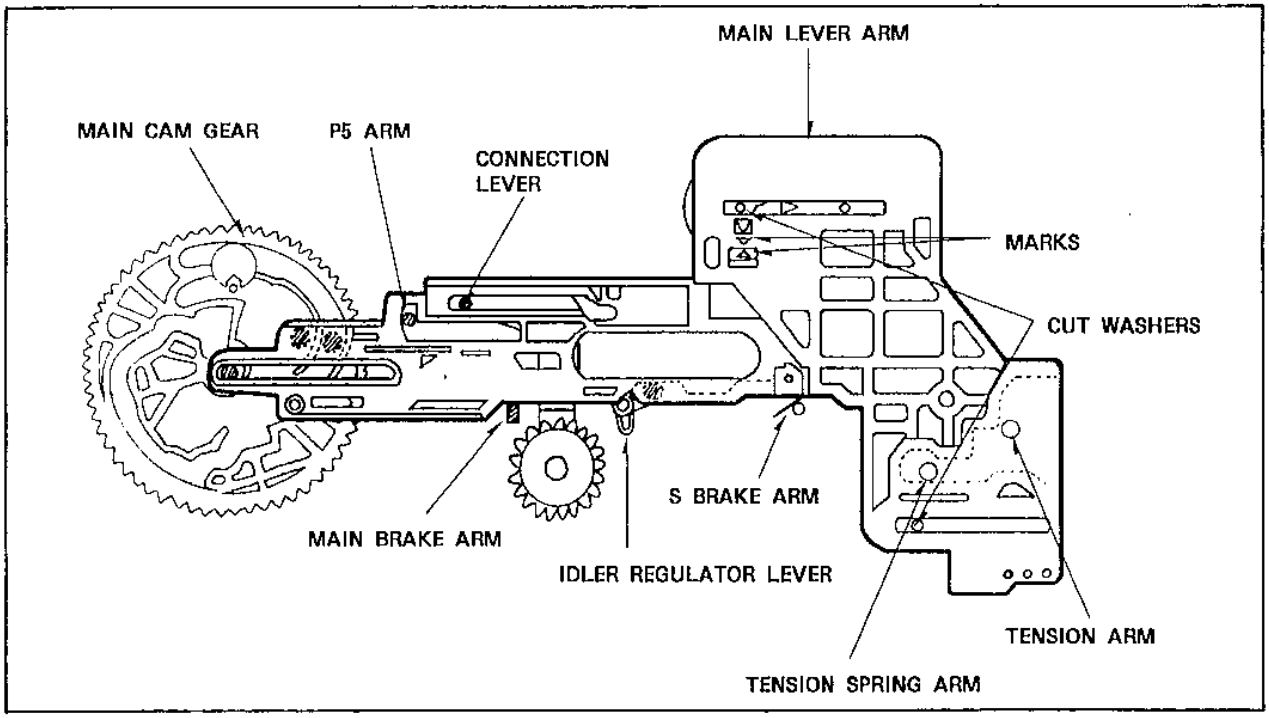


Fig.M43

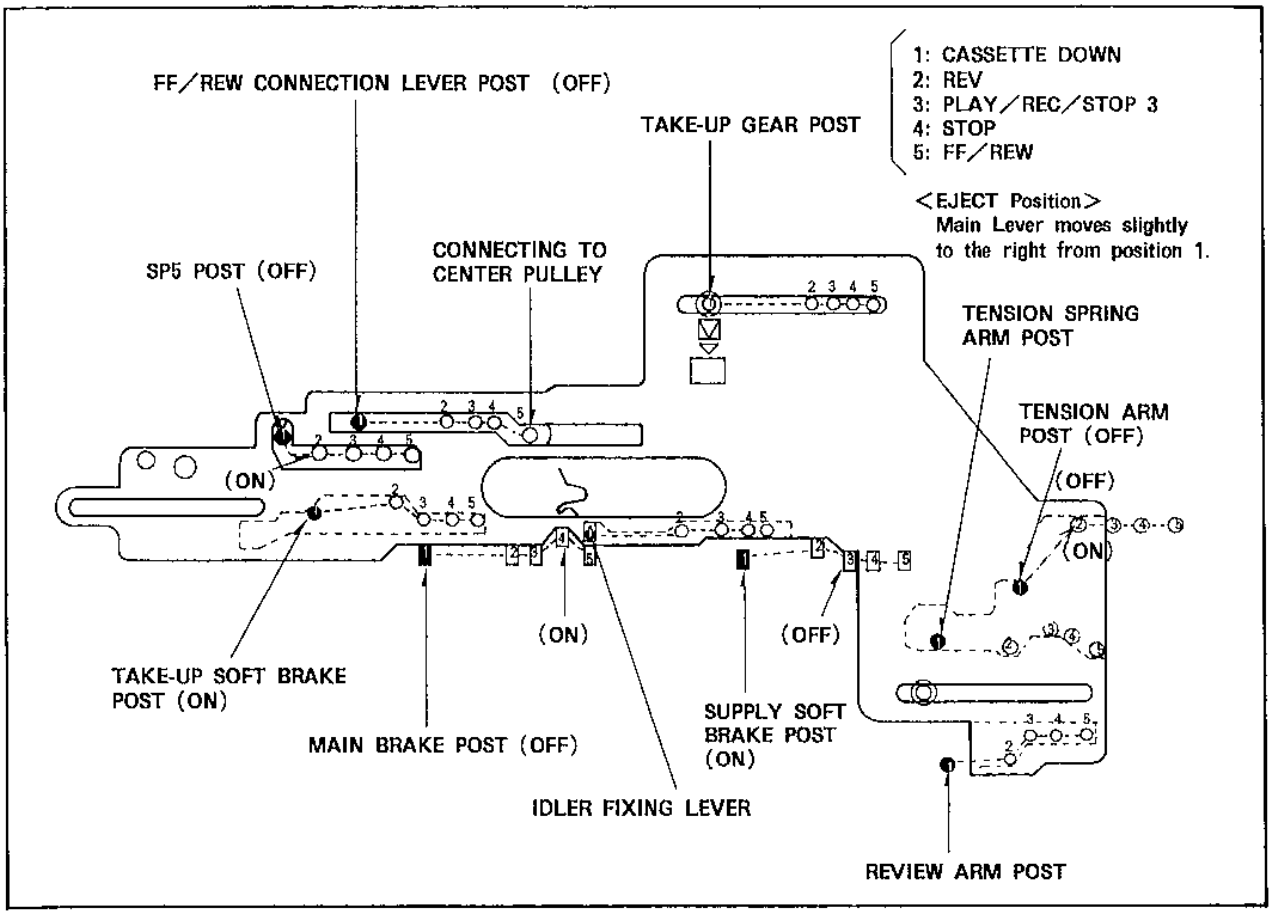


Fig.M44

4-8. Reinstall of the Cassette Compartment

1. Push the locking tabs to direction as shown in Fig.M45 and remove the Top Plate.

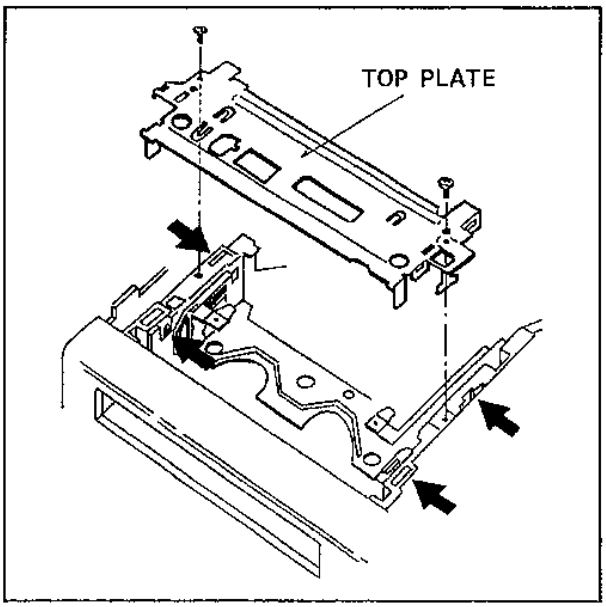


Fig.M45

2. Lift up the Cassette Holder Unit as shown in Fig.M46.

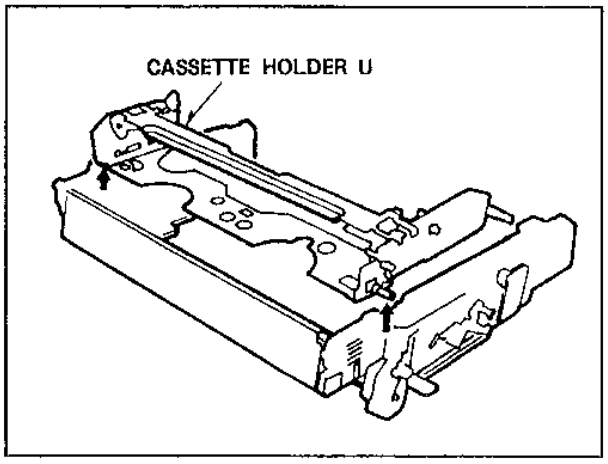


Fig.M46

3. Press the Wiper Arm to direction indicated by arrow mark so that the Wiper Arm comes to cassette down position completely as shown in Fig.M48. Confirm a triangle mark on the Wiper Arm aligns with the mark on the Rack (B) Unit.

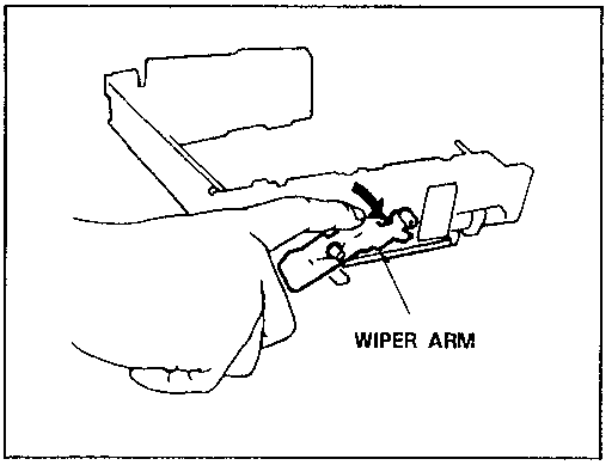


Fig.M47

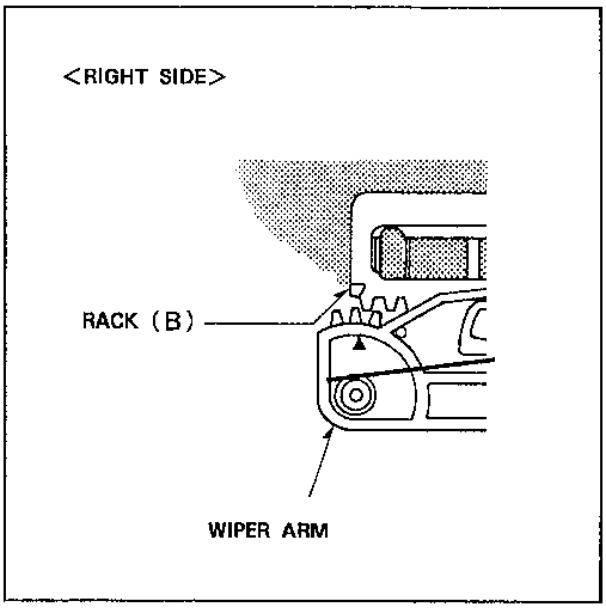


Fig.M48

4. Install the cassette compartment (without cassette holder) to the mechanical chassis so that mark on the Holder Connection Gear should line up with first tooth of the Rack Gear as shown in Fig.M49.

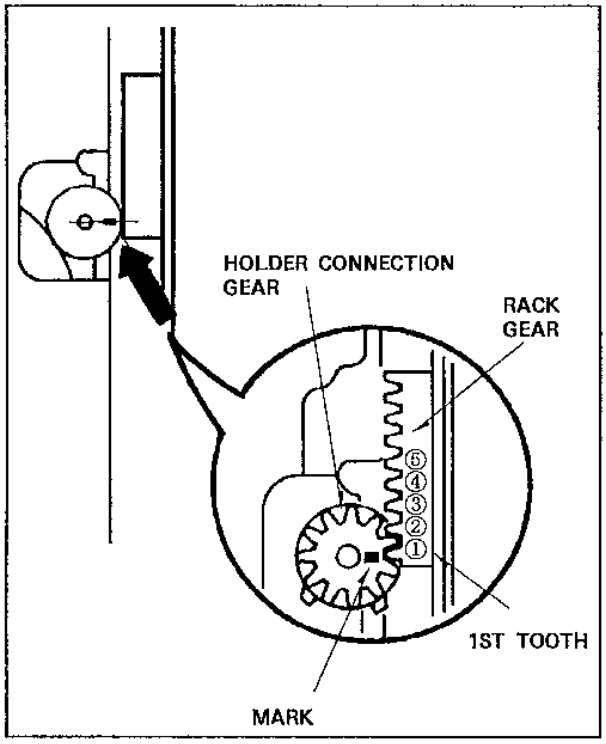


Fig.M49

5. Tighten 4 screws as shown in Fig.M50.
6. Manually move the loading mechanism toward the EJECT position by turn the Loading Motor and stop just before completion, so that the Wiper Arm straight up.
7. Install the Cassette Holder Unit in the Cassette Compartment Base as shown in Fig.M51.
8. Install the Top Plate on the Cassette Compartment Base.
9. Manually confirm that front loading and main loading run smoothly.

<NOTE>
For proper front loading, the guide pin on the opener lever should follow the upper track of the right side panel as shown in Fig.M52.

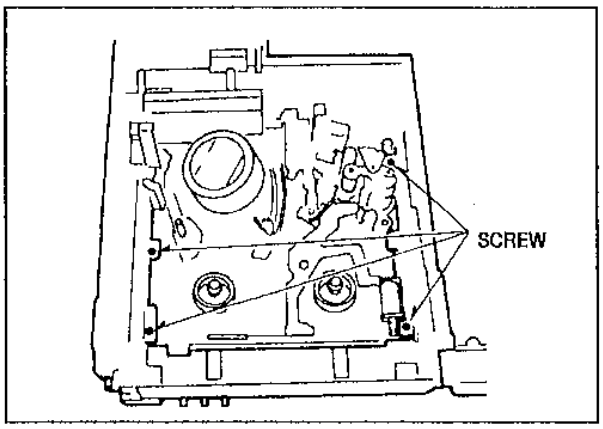


Fig.M50

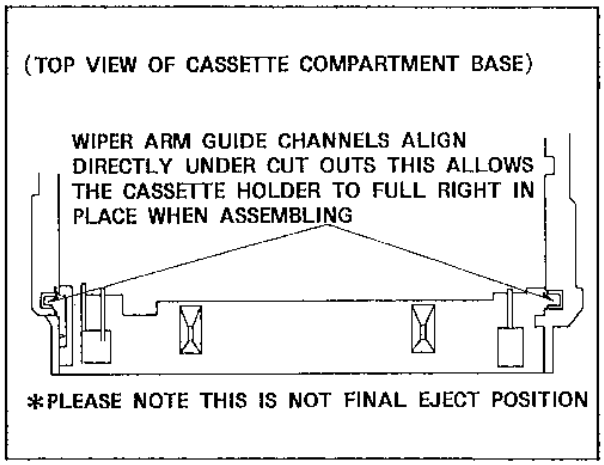

(TOP VIEW OF CASSETTE COMPARTMENT BASE)
WIPER ARM GUIDE CHANNELS ALIGN DIRECTLY UNDER CUT OUTS THIS ALLOWS THE CASSETTE HOLDER TO FULL RIGHT IN PLACE WHEN ASSEMBLING
*PLEASE NOTE THIS IS NOT FINAL EJECT POSITION

Fig.M51

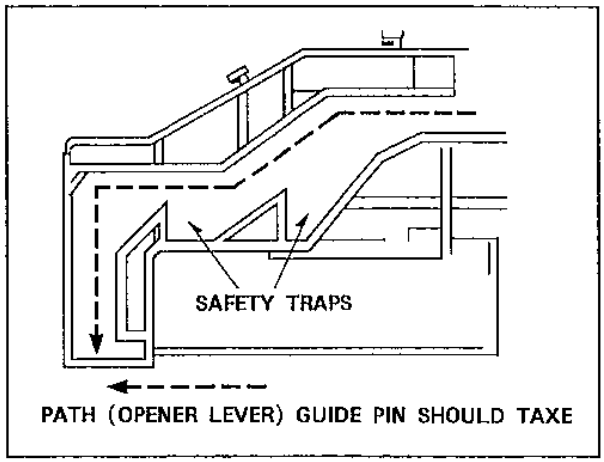


Fig.M52